

LIBRARY

RL

OF THE

Theological Seminary.

PRINCETON, N. J.

PER AS 472 .A84 v.7:1

Journal of the Asiatic
Society of Bengal



Digitized by the Internet Archive
in 2016



THE

JOURNAL

OF

THE ASIATIC SOCIETY

OF

BENGAL.



VOL. VII.



THE
JOURNAL
OF
THE ASIATIC SOCIETY
OF
BENGAL.

EDITED BY

JAMES PRINSEP, F. R. S.

SECRETARY OF THE ASIATIC SOCIETY OF BENGAL ; HON. MEM. OF THE AS. SOC.
OF PARIS ; COR. MEM. OF THE ZOOLOGICAL SOC. OF LONDON, AND OF THE
ROYAL SOCIETIES OF MARSEILLES AND CAEN ; OF THE ACADEMY
OF NATURAL SCIENCES OF PHILADELPHIA ; OF THE
PHILOSOPHICAL SOCIETY OF GENEVA ; OF
THE ALBANY INSTITUTE, &c.

VOL. VII.—PART I.

JANUARY TO JUNE,
1838.

“ It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia* will commit their observations to writing, and send them to the Asiatic Society at Calcutta ; it will languish, if such communications shall be long intermitted ; and will die away, if they shall entirely cease.”

SIR WM. JONES.

Calcutta :

PRINTED AT THE BAPTIST MISSION PRESS, CIRCULAR ROAD.
SOLD BY THE EDITOR, AT THE SOCIETY'S OFFICE.

1838.

THE
JOURNAL
OF
THE ASIATIC SOCIETY
OF
BENGAL.

EDITED BY

JAMES PRINSEP, F. R. S.

SECRETARY OF THE ASIATIC SOCIETY OF BENGAL ; HON. MEM. OF THE AS. SOC.
OF PARIS ; COR. MEM. OF THE ZOOLOGICAL SOC. OF LONDON, AND OF THE
ROYAL SOCIETIES OF MARSEILLES AND CAEN ; OF THE ACADEMY
OF NATURAL SCIENCES OF PHILADELPHIA ; OF THE
PHILOSOPHICAL SOCIETY OF GENEVA ; OF
THE ALBANY INSTITUTE, &c.

VOL. VII.

JANUARY TO DECEMBER,
1838.

“ It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia* will commit their observations to writing, and send them to the Asiatic Society at Calcutta ; it will languish, if such communications shall be long intermitted ; and will die away, if they shall entirely cease.”

SIR WM. JONES.

Calcutta:

PRINTED AT THE BAPTIST MISSION PRESS, CIRCULAR ROAD.
SOLD BY THE EDITOR, AT THE SOCIETY'S OFFICE.

1838.



P R E F A C E.

IN conformity with the practice observed in the past conduct of this Journal, we submit with the December number for the year 1838, a brief exposition of the circumstances, adverse or favorable, under which it has been carried on. But as this is the last volume of the series, conducted by the Editor who has heretofore addressed his subscribers in this form, it is right that our review should embrace the whole period of his conduct of the work.

It is known to all our readers, that the idea of establishing in India a periodical work whose pages should be devoted to Science, originated with the late Captain HERBERT, who under the name of *Gleanings of Science* issued monthly a few sheets, professing to contain, with one or two original communications, selected extracts from scientific works of Europe—the selection being confined to such as, except through a reprint in India, were likely to escape the perusal of the curious and interested. The little Periodical thus modestly put forth found early favor in Bengal: one cause of which may have been, that there existed at that time no channel, through which the discoveries and speculations of the learned and ingenious could find their way to the public, except as separate works, which for short treatises was out of the question, or through the learned pages of the *Asiatic Researches*, of which the volumes appeared after very uncertain periods, and latterly at very long intervals.

The monthly Periodical issued under the name of the *Gleanings of Science*, having been conducted by Captain HERBERT for three years, with very creditable industry and judgment, and with corresponding success, was transferred by him to Mr. JAMES PRINSEP, consequently upon his obtaining employment at a distance from Calcutta. The Periodical continued, for some time after the change of Editor, to win its way to public favor under the same name; and, as the subscription list extended, sheets and extra plates were added to its bulk—the new conduc-

tor professing, like his predecessor, to have no desire to make money by the publication, but being determined, and to this day he has adhered to the determination, to devote the entire proceeds of an increasing circulation, to the extension of its utility, by improvements in the getting up, and additions to the quantity of matter circulated through its means.

The Periodical received for some years much encouragement through an arrangement made with the Government of Bengal, by which it was exempted from postage, under the condition of publishing each month one sheet of Dr. BUCHANAN'S Statistical Reports of this Presidency. The arrangement continued till June 1834, when Dr. BUCHANAN'S Report upon the district of *Dinajpur* being completed, the indulgence of free circulation in the interior was withdrawn, and the further publication of these statistical reports as an Appendix to the Journal was stopped.

There is no doubt that the arrangement was an unusual one for a Government to make, and as it proved embarrassing in the precedent it established, and in the claims to which it gave rise in other Publications professing religious and other praise-worthy objects, the withdrawal has never been a subject of complaint.

The Periodical had, however, while this privilege lasted, obtained its advantage in making its existence known throughout India, and thus in inviting the scientific and the speculative to avail themselves of its pages for the publication of the results of their studies. We gratefully acknowledge that the success of the Journal has been mainly owing to the manner in which this invitation has been responded to.

The burthen of postage under the Post-office Rules, which existed before the Act for equalizing them throughout India was passed in 1837, bore very heavily on distant subscribers: nevertheless the loss of the indulgence of free transmission occasioned no diminution of the subscription list of the Journal, nor was this affected by the further change of an increased subscription, which became indispensable consequently upon a large augmentation of the number of pages and plates. On the contrary it has been found necessary to add continually to the number of impressions ordered from the printer,

and the demand for early numbers for the completion of sets has far exceeded the means possessed of furnishing them. The series of the *Gleanings* is quite out of print, so much so as to have led the Editor to contemplate a reprint of its most valuable original articles: and even the volumes of the Journal for the years from 1832 to 1835, that is for the first three years after the Periodical assumed the title of *Journal of the Asiatic Society*, are procurable now with extreme difficulty, our Publishers having no spare copies on hand.

We close the year 1838 with a subscription list of 325 names, besides the copies furnished to Government and to the Asiatic Society, or exchanged with other periodicals, constituting a circulation of upwards of 500, the good-will of which we freely make over to the conductors of the new series, in the confident hope, that they will worthily follow in the same career, and through their exertions daily win fresh proofs of the favor and confidence of the public.

The retrospect of the past management is to us a source of pride and much satisfaction. The advance that has been made in every branch of Science and of Indian Research, since the Journal fell into the late Editor's hands, will not fail to strike every observer; and few will deny to himself and to his Periodical, a large share of the merit of producing this great result.

Wide indeed has been the range of subjects which have been illustrated in the volumes of this Journal. In Astronomy no phenomenon has appeared, that has not been fully explained with its calculations. In Natural History the Journal has been enriched by the valuable contributions of Colonel SYKES, of HODGSON and Dr. EVANS, of Drs. GRIFFITH, McCLELLAND, PEARSON, FALCONER and HELFER, of BENSON and HUTTON, and these with many others have through our pages devoted themselves to the classification of known objects, or to the description of new specimens, so as to render the Journal a necessary book of reference to Zoologists, Botanists, Conchologists, Entomologists, and to the learned in almost every other branch of this Department of Science.

In Chemistry Dr. O'SHAUGHNESSY, to whom the editorial chair is now resigned, Dr. PEARSON, and Mr. PIDDINGTON have combined with the late Editor himself to apply every kind of

analysis to the investigation of substances, and the Journal has been a perfect record of new discoveries and ingenious results in that department.

In Geography there will be found a greater variety of new routes, of surveys, and of accurate intelligence regarding countries imperfectly known, than any other work of equal duration and bulk can boast of possessing.

The Geology of India has been investigated and portrayed with a zeal that has been acknowledged by the Societies, and by the Learned of Europe, and the fossil remains that have been extracted from various localities, from the sub-*Himalaya* and from *Ava*, and from the *Nerbudda* valley, have excited the astonishment and admiration of those whose lives were devoted to this branch of Science, and who first through the pages of this Journal became acquainted with the existence of the new animals discovered. In this line the Journal has been most indebted to Colonel COLVIN, and Captain CAUTLEY of the Bengal Engineers, to Drs. FALCONER and SPILSBURY, and Colonel BURNEY; and Serjeant DEAN of the Sappers and Miners, has been by no means the least worthy of its contributors.

In Statistics many subjects have been investigated accurately, and with effect: and the manners and customs of many new tribes have been illustrated and described with truth and liveliness, so as to make the Journal a pleasant travelling companion to adventurous voyagers, and a work of useful reference to functionaries in the interior.

In the department of Languages the Journal has done much. Grammars and Vocabularies of several new dialects have been contributed by Lieut. LEECH, and by others before him. In Navigation some important papers, illustrative of the state of this art in the middle ages, have been contributed by Baron VON HAMMER, now COUNT PURGSTALL, from the centre of Germany, and this is far from being the only proof we could adduce of the favor won for the Journal amongst the learned of the European Continent.

But much as has been done in all these departments of Philosophy and useful Science, it is not for these, or through these, that the memory of the Journal will principally be cherished.

Since it was established as the channel for giving to the world original discoveries in the East, there has been opened an entirely new field of research, in the Buddhistical annals of periods antecedent to the spread of Bralminical doctrines with the Sanskrit language ; and through the successful cultivation of this field advances have been made in restoring the early History of India, which throw into the shade the investigations of the great men of the preceding thirty years. In this department the Honorable Mr. TURNOUR of *Ceylon* stands pre-eminently conspicuous, and Mr. HODGSON of *Nipal*, with Mr. CSOMA DE KÖRÖS, the learned author of the Tibetan Dictionary and Grammar, have worthily prosecuted the same studies. They have been illustrated and advanced by incidental notices from the Burmese and Siamese records, which through the Journal have been opened to the world by Col. BURNEY, Captain Low, and others, and the results obtained from all these sources have been established by the crowning discovery of all, the key to the ancient inscriptions of ASOKA in *Pali*, the merit of which rests with our Editor himself.

That our Journal should be the fortunate Publication to give forth so much of novel interest in relation to the History and Antiquities of the country to which it is devoted, may well be a source of pride, but its claims upon the learned do not stop here. The illustrations of the ancient History of India would have been incomplete, if the link had not been rivetted to connect its annals with the coeval authentic histories of Ancient Greece and Egypt. This too has been accomplished in the pages of our Journal, and mainly through the personal influence and discoveries of its Editor, acting upon the zeal and spirit of research which existed, or was excited in others.

Through the Journal attention was first drawn to the coins of past ages, as a means of following backward the series of Indian Kings and Dynasties. Genl. VENTURA, Mr. MASSON, Sir A. BURNES, and others, have in consequence devoted themselves to the collection of coins and relics in the countries which were the scene of Grecian enterprise ; and Col. STACY, Dr. SWINEY, Capt. CUNNINGHAM, Mr. TREGEAR, and many more have pursued the same line in different parts of India, placing themselves all in communication with our Editor, that their dis-

coveries might through him be combined into one general result.

The consequence has been, that in a very short time the desired link between the histories of the East and West has been completely established, and races of kings have been traced down from the immediate followers of ALEXANDER, who settled in *Bactria* and *Kábul*, and established a Grecian device and inscription for their coin, and even from before that, when Western India was a province of *Persia*, to the times when the Hindu successors of the Satraps and Grecian kings yielded to the Muhammadan conquerors, and thence too downward even to the present day.

The corruptions of language and of alphabet, traceable in these coins, mark as clearly the successions of races, as if the date of each had been consecutively stamped on the coins. and the simultaneous collection of inscriptions from all parts of India, with the key obtained for decyphering them, has afforded a ready test for the accuracy of the numismatic deductions, and an aid to their more complete development.

One object yet remained to excite the zeal, and to occupy the attention of those devoted to these pursuits. The History of India had been traced back to the period before the invasion of ALEXANDER, and had been verified at each step by coins and by inscriptions, but the language of *Bactria* and of *Persia* at the period of that conquest was still insufficiently ascertained. To this object our Editor was devoted, when he was overtaken by sickness and compelled to leave India. The Bactrian alphabet was already more than half discovered, through the comparison of letters upon coins with bilingual superscriptions. Several inscriptions, as obtained from the Topes excavated, or as forwarded by travellers from within the ancient limits of *Bactria*, were nearly decyphered, so that very little remained to perfect this discovery also, and to establish that the ancient *Pali* language, or something very closely resembling it, prevailed over all those countries.

To the world it is a loss, to himself a disappointment, that his series of the Journal closes before this discovery also is completed. We hope and trust that the scene of its development is only changed, or rather that he, who has achieved so much for

India, may be restored in health before long to the country to which his best years have been devoted, to renew his useful labours there, and to gather fresh laurels in the field of its Science and antiquarian Research.

It is now 19 years since Mr. JAMES PRINSEP arrived amongst us, a boy in age, wanting perhaps the finish of classic scholarship which is conferred at the public schools and universities of England, but well grounded in Chemistry, Mechanics, and all useful sciences. He came to India as Assistant to Dr. WILSON, in the Assay Office at Calcutta; but, after a residence of little more than a year, was removed to *Benares* to take independent charge of the same department in the mint of that city. At *Benares* he remained for nearly 10 years, during the better part of which he superintended also works of improvement in the city, with many of which, as of more than common ingenuity and usefulness, his name is still associated; but his memory survives yet more in the recollection of the many estimable qualities, which endeared him to all classes of the population.

Upon the Mint of *Benares* being abolished in 1830, he resumed his post in Calcutta, and was soon after employed in completing the canal and locks to connect the Hoogly river with the Salt Water Lake and Sundurbuns, which had been commenced by a brother, who was attached to the Bengal Engineers, but who met a sudden and violent death by a fall from his horse. The work being completed with skill, he was presented with a handsome and quite unexpected gratuity by the thrifty Government of Lord WM. BENTINCK. Soon after this, Mr. WILSON returning to Europe, Mr. JAMES PRINSEP found it necessary to confine himself to the duties of the Assay Office, which superadded to the laborious scientific pursuits and researches in which he was engaged, afforded full employment for his time. A change of currency, to which his advice conduced, brought an accession of official duty in the Assay Department, while at the same time the success which attended his researches in the depths of science, and his attempts to illustrate the antiquities of the country to which he was devoted, stimulated him to exertions in that line also, under which his constitution at length sank. After fighting fruitlessly against the approaches of disease for a couple of months, he was at last

compelled, as will be found recorded in the pages of this Journal, to quit the country suddenly in the ship *Herefordshire* in the early part of the month of November.

His friends and brothers are now anxiously expecting to receive from the Cape of Good Hope, the first accounts of the effect of the sea-voyage upon his health. In the midst of their anxiety, they may be excused for the apparent egotism, of placing so much of eulogy, and of personal memoir, in the Preface to the last volume of his series of the Journal.

CALCUTTA, }
February, 1839. }

CONTENTS.

No. 73.—JANUARY.

	<i>Page</i>
I.—History of Cooch Behár, being an extract of a passage from Dr. Buchanan's Account of Rungpur (Rangapura),	1
II.—Notice of the Himálayan Vulture Eagle. By Lieut. T. Hutton,	20
III.—Account of Kálá Bágh on the right bank of the Indus. By Munshí Mohan Lál,	25
IV.—A brief account of the Origin of the Dáúd Putras, and of the power and birth of Baháwal Khán their Chief, on the bank of the Ghara and Indus. By the same,	27
V.—Facsimiles of Ancient Inscriptions, continued,	33
VI.—Extracts from the Journal of Lieut. Markham Kittoe, submitted to the Asiatic Society at the meeting of the 6th Oct. 1836.—Ruins and Pillar at Jájipur,	53
VII.—Remarks on "a Comparison of Indo-Chinese Languages, &c." By the Rev. W. Morton,	56
VIII.—On the difference of level in Indian Coal fields, and the causes to which this may be ascribed. By J. McClelland, Esq. Secretary to the Committee for investigating the Coal and mineral Resources of India,	65
IX.—Abstract of a Meteorological Register kept at the Cathmandu Residency, for the month of Sept. 1837. By A. Campbell, Esq. Nipal Residency,	83
X.—Meteorological Registers kept at Darjiling, for September, October and November, 1837,	84
XI.—Proceedings of the Asiatic Society,	87
XII.—Meteorological Register,	92

No. 74.—FEBRUARY.

I.—Account of the expedition of Chach (Chacha) extracted from the Chach Námeb, and extracts from the Tóhfát ul Khwán. By Ensign Postans,	93
II.—Examination and Analysis of the Mackenzie Manuscripts deposited in the Madras College library. By the Reverend William Taylor,	105
III.—Report on the Caoutchouc Tree of Assam made at the request of Captain Jenkins, Agent to the Governor General. By William Griffith, Assistant Surgeon on deputation with the Bhotan Mission,	132
IV.—Notices on the different systems of Buddhism, extracted from the Tibetan authorities. By Alexander Csoma Kőrösi,	142
V.—Enumeration of Historical and Grammatical works to be met with in Tibet. By the same,	147
VI.—Section of a Hill in Cuttack supposed to be likely to contain Coal. By M. Kittoe, Esq.	152
VII.—Discovery of the name of Antiochus the Great, in two of the edicts of Asoka, king of India. By James Prinsep, Sec. &c.	156
VIII.—Proceedings of the Asiatic Society,	167
IX.—Meteorological Register,	172

No. 75.—MARCH.

I.—Examination and Analysis of the Mackenzie Manuscripts deposited in the Madras College library. By the Reverend William Taylor,	173
II.—On the Revolution of the Seasons: By the Rev. Robert Everest, ..	192
III.—Table of Indian Coal analyzed at the Calcutta Assay Office, including those published in the <i>Gleanings in Science</i> , September 1831, arranged according to localities, extracted from the Report of the Coal Committee, ..	197
IV.—Extracts from the Journal of Lieut. Markham Kittoe, submitted to the Asiatic Society at the meeting of the 6th Oct. 1836.—Ruins and Pillar at Jajipur,	200
V.—On a remarkable heat observed in masses of Brice kept for some time in large reservoirs. By G. A. Prinsep, Esq.	207
VI.—On the Land and Fresh-water Shells of the Western Himálaya. By Lieut. T. Hutton, 37th Regt. N. I. and W. H. Benson, Esq., C. S. ..	211
VII.—On the Edicts of Piyadasi, or Asoka, the Buddhist monarch of India, preserved on the Girnar rock in the Gujerat peninsula, and on the Dhauli rock in Cuttack; with the discovery of Ptolemy's name therein. By James Prinsep, Secretary, As. Soc. &c.	219
VIII.—Proceedings of the Asiatic Society,	283
IX.—Meteorological Register,	286

No. 76.—APRIL.

I.—Restoration and Translation of the Inscription on the large Arracan Bell now at Nadrohighát, Zillah Alligarh, described by Captain Wroughton in the <i>Journal Asiatic Society</i> , December 1837,	287
II.—Extracts from the <i>Tóhfat ul Kiram</i> , and the <i>Chach Nameh</i> , translated by Lieutenant T. Postans,	297
III.—Note of a visit to the Nítí pass of the grand Himálaya chain. By J. H. Batten, Esq. C. S.	310
IV.—Additional notice on the geography of Cochin China. By the Most Rev. Jean Louis, Bishop of Isauropolis,	317
V.—On the Reg-Ruwan or moving sand, a singular phenomenon of sound near Cabúl with a sketch. By Capt. Alex. Burnes,	324
VI.—On the Siah-pósh Kaffirs with specimens of their language and costume. By Captain Alex. Burnes,	325
VII.—Examination of the Inscriptions from Giroár in Gujerát, and Dhauli in Cuttack, continued. By James Prinsep, Sec. As. Soc.	334
VIII.—A letter to Dr. Helfer, on the Zoology of Tenasserim and the neighbouring Provinces. By Assist. Surg. J. T. Pearson,	357
IX.—Mode of Manufacture of the Salumba salt of Upper India, extracted from a Report by C. Gubbins, Esq. C. S.	363
X.—Proceedings of the Asiatic Society,	364
XI.—Meteorological Register,	370

No. 77.—MAY.

I.—Second Report on the Examination and Restoration of the Mackenzie Manuscripts. By the Reverend William Taylor,	371
II.—On the application of a new method of Block-printing, with examples of unedited coins printed in facsimiles. By James Prinsep, Sec. &c. ..	414
III.—Note on the affinities of Galathea of Lamarck (<i>Potamophila</i> of Sowerby), a Genus of Fluvial Testacea. By W. H. Beeson, Esq. Bengal Civil Service,	420

	<i>Page</i>
IV.—Account of the Hurricane or Whirlwind of the 8th April, 1838. By Mr. J. Floyd, (communicated by J. H. Patton, Esq. Magistrate of the 24-Per-gunnahs,)	422
VI.—Account of an ancient temple at Hissar, and of the ship model at that place. By Capt. Wm. Brown,	429
VII.—An account of the Jain Temple at Badrásir; and ruins of Badránagiri in the province of Cutch. By Lieut. W. Postans,	431
VIII.—Examination of the separate edicts of the Aswastama inscription at Dhauli in Cuttack. (Plate X.) By James Prinsep, Sec. &c.	434
IX.—Proceedings of the Asiatic Society,	456
X.—Meteorological Register,	468

No. 78.—JUNE.

I.—Second Report on the Examination and Restoration of the Mackenzie Manuscripts. By the Reverend William Taylor,	469
II.—Some account of a visit to the plain of Koh-i-Dáman, the mining district of Ghorhand, and the Pass of Hindu Kásh, with a few general observations respecting the structure and conformation of the country from the Indus to Kábul. By P. B. Lord, M. B. in Medical charge of the Kábul Mission,	521
III.—Epitome of the Grammars of the Brahuiky, the Balochky and the Panjábí languages, with Vocabularies of the Baraky, the Pashi, the Laghmani, the Cashgari, the Teerhai, and the Deer dialects. By Lieut. R. Leech, Bomhay Engineers, Assistant on a Mission to Kábul,	538
IV.—Translation of Inscription in the Society's museum. Continued from vol. VI. p. 887,	557
V.—More Dánams from the Sanchi tope near Bhilsa, taken in impression, by Capt. T. S. Burt, Engineers. Translated by Jas. Prinsep,	562
VI.—Proceedings of the Asiatic Society,	567
VII.—Meteorological Register,	582

No. 79.—JULY.

I.—Excursion to the Eastward. No. 1,	583
II.—Epitome of the Grammars of the Brahuiky, the Balochky and the Panjábí languages, with Vocabularies of the Baraky, the Pashi, the Laghmani, the Cashgari, the Teerhai, and the Deer dialects. By Lieut. R. Leech, Bomhay Engineers, Assistant on a Mission to Kábul,	608
III.—Native account of washing for gold in Assam. By Moneeram, Revenue Sheristadar, Bur Bundaree,	621
IV.—Further information on the gold washings of Assam, extracted from Capt. Hannay's communications to Capt. Jenkins, Agent to the Governor General in Assam,	625
V.—Lithographs and translations of Inscriptions taken in ectype by Captain T. S. Burt, Engineers: and of one, from Ghosi taken by Captain A. Cunningham, of the same corps,	629
VI.—Additions to Bactrian Numismatics and discovery of the Bactrian Alphabet. By James Prinsep, Sec. As. Soc. &c.	636
VII.—Note on a fossil Ruminant genus allied to Giraffidæ in the Siwalik hills. By Captain P. T. Cautley,	658
VIII.—Sketch of the sculptured images, on the temple of Grámeswara, near Ratrapur: extracted from Lieut. Kittoe's Journal,	660
IX.—Proceedings of the Asiatic Society,	663
X.—Meteorological Register,	670

No. 80.—AUGUST.

I.—A short account of the Moa Morah sect, and of the country at present occupied by the Bor Senaputtee. By S. O. Hannay, Capt. 40th Regt. N. I. Asst. to the Commissioner in Assam,	671
II.—Mr. Kittoe's Journal of his Tour in the Province of Orissa,	679
III.—An examination of the Páli Buddhistical Annals, No. 3. By the Hon'ble George Turnour, Esq. Ceylon Civil Service,	686
IV.—Report on the Coal discovered in the Tenasserim provinces, by Dr. Helfer, dated Mergui, 23rd May, 1838,	701
V.—Comparison of Asiatic Languages,	707
VI.—Epitome of the Grammars of the Brahuiky, the Balochky and the Panjâbi languages, with Vocabularies of the Baraky, the Pashi, the Laghmani, the Cashgari, the Teerhai, and the Deer dialects. By Lieut. R. Leech, Bombay Engineers, Assistant on a Mission to Kâbul,	711
VII.—Note on a species of Aretonix from Arracan. By Dr. G. Evans, Curator, As. Soc. Museum.	732
VIII.—Translation of an Inscription on a Tâmba Patra found in the Village of Pipliânagar, in the Shujalpur Pergana, and presented to the Political Agent, Bhopal, by the Jagirdâr. By L. Wilkinson, Esq. Pol. Agent,	736
IX.—Proceedings of the Asiatic Society,	742
X.—Meteorological Register,	750

No. 81.—SEPTEMBER.

I.—Botanico-Agricultural account of the protected Sikh States. By M. P. Edgeworth, Esq., C. S. Musurî,	751
II.—Extracts from the Mohit (the Ocean), a Turkish work on Navigation in the Indian Seas. Translated and Communicated by Joseph Von Hammer, Baron Purgstall, Aulic Counsellor, and Prof. Orient. Lang. at Vienna, Hon. Memb. As. Soc. &c. &c.	767
III.—Epitome of the Grammars of the Brahuiky, the Balochky and the Panjâbi languages, with Vocabularies of the Baraky, the Pashi, the Laghmani, the Cashgari, the Teerhai, and the Deer Dialects. By Lieut. R. Leech, Bombay Engineers, Assistant on a Mission to Kâbul,	780
IV.—Note on the New Zealand Caterpillar. By G. Evans, Esq. Curator of the As. Soc. Museum,	787
V.—An Examination of the Páli Buddhistical Annals, No. 3. By the Hon'ble George Turnour, Esq. Ceylon Civil Service,	789
VI.—Table of Mortality for ages from birth to twenty years, framed from the Registers of the Lower Orphan School, Calcutta. By H. T. Prinsep, Esq.	818
VII.—Sketch of the Temple to Durga at Badeswur, &c. extracted from Lieut. Kittoe's Journal,	823
VIII.—Proceedings of the Asiatic Society,	829
IX.—Meteorological Register,	833

No. 82.—OCTOBER.

I.—Report of a visit made to the supposed Coal Field at Bidjeegurh (Vijayagadha). By Mr. George Osborne, Sub. Dep. Opium Agent, Benares division,	839
II.—Report on ten specimens of Coal from Captain Burnes,	843
III.—Note on the animal productions of the Tenasserim Provinces; read at the meeting of the 10th October, 1838. By J. W. Helfer, Esq. M. D. . . .	855
IV.—On a new species of Pheasant from Tibet. By B. H. Hodgson, Esq.	863

	<i>Page</i>
V.—Notes of a journey to Girnâr in the Province of Kattywâr, for the purpose of copying the ancient inscriptions upou the rock near that place.—Undertaken by order of the Bombay Government. By Lieut. Postans, Bombay Engineers ; with two notes on Somnâth, one by Mr. Kittoe,	865
VI.—Population and Mortality in Calcutta,	888
VII.—Report on the Weights, Measures, and Coins of Cabul and Bukhara. By Nowrozjee Furdoonjee. Forwarded by Captain Burnes to Government, and transferred to the Asiatic Society,	892
VIII.—Ancient Inscriptions,	901
IX.—Proceedings of the Asiatic Society,	915
X.—Meteorological Register,	918

No. 83.—NOVEMBER.

I.—An examination of the Páli Buddhistical Annals, No. 4. By the Hon'ble George Turnour, Esq. Ceylon Civil Service,	919
II.—Report on the Copper mines of Kumaon. By Capt. H. Drummond, 3rd B. L. C.	934
III.—Observations on six new species of Cyprinidæ, with an outline of a new classification of the family. By J. McClelland, Esq., Bengal Medical Establishment,	941
IV.—Report upon the Coal beds of Assam. (Submitted to Government by the Committee appointed to investigate the Coal and Iron resources of the Bengal Presidency, as a supplement to their first printed Report,)	948
V.—Ancient Inscriptions,	966
VI.—Information regarding Illauoon Pirates. By Capt. Blake, H. M. S. Larne,	978
VII.—Proceedings of the Asiatic Society,	983
VIII.—Meteorological Register,	990

No. 84.—DECEMBER.

I.—An examination of the Páli Buddhistical Annals, No. 5. By the Hon. George Turnour, Esq. Ceylon Civil Service,	991
II.—On the spontaneous heating of Brine. By G. A. Prinsep, Esq.	1014
III.—A short notice of the coast-line, and rivers and islands adjacent, forming a portion of the Mergui Province, from a late survey. By Captain R. Lloyd, I. N.	1027
IV.—On the genus Hexaprotodon of Dr. Falconer and Captain Cautley. By J. McClelland, Assist. Surgeon, Bengal Service,	1038
V.—Coins and relics from Bactria,	1047
VI.—Ancient Hindu Coins from Jyonpur and Oojein,	1052
VII.—Ancient Inscriptions,	1055
VIII.—Mr. Kittoe's tour in Orissa, continued from page 829 of September 1838,	1060
IX.—Meteorological Register,	1064

ERRATA.

In the December No. 1837.

Page

- 992, for 'impossible,' read 'impassable,'
 997, for 'he permitted,' read 'be permitted.'
 1076, for 'or Cuttack,' read 'of Cuttack.'
 1079, for 'detached of yore,' read 'detached figures.'
 1078, note, for 'meet any attention,' read 'merit any attention.'
 1079, line 10, alter the stops thus. 'Khandgiri has but few caves. On the summit there is, &c.'

Page line

- 37, 12, for 'सुचारुगिरि,' read 'गिरि.'
 43, 24, for 'वेशविलाशिनी,' read 'वेशविलासिनी.'
 — 26, for 'मुक्ति,' read 'भुक्ति.'
 44, 13, for 'साभूचि,' read 'साभञ्चि.'
 45, 14, dele 'धत,' after 'घ्यात.'
 46, 23, for 'दुतीय,' read 'दि,' and dele '
 249, 21, notes, for 'सूपः,' read 'सूप.'
 250, 6, ,, for 'अनुशयनं,' read 'अनुशयनं.'
 — — ,, for 'स्यात्,' read 'स्यात्.'
 — 7, ,, for 'निःक्षम भूवेत्,' read 'निःक्षमो भवेत्.'
 252, 15, ,, after 'दृश्यति,' insert '(पश्यति).'
 — 18, ,, for 'खे खे,' read 'खे खे.'
 253, 13, ,, after 'मज्जनया,' dele :
 — 23, ,, after 'वद्दि,' insert :
 255, 6, ,, after 'विविदानी,' insert '(विविदुषी).'
 — 23, ,, after 'व श्रेयु,' insert :
 — 26, ,, for 'भावसुद्धि,' read 'भावशुद्धि.'
 259, 4, from below for 'प्रविजितान्,' read 'प्रव्रजितान्.'
 263, 24, for 'भैत,' read 'भूत.'
 273, 2, from below for 'निर्जित्य,' read 'निर्जित्य.'
 277, 22, for 'इहतोपारतः,' read 'इहतःपरतः.'
 278, 31, read 'तिष्ठेत,' or 'छेयात्.'
 442, 41, for 'दुवरः,' read 'दुर्वारः.'
 443, 15, for 'दधं,' read 'अयं.'
 — 30, for 'दृष्यते,' read 'दृश्यते.'
 — 32, for 'नतिः,' read 'नीतिः.'
 444, 25, for 'इच्छितयः,' read 'इच्छितयः.'
 — — for 'एष्टयः,' read 'एष्टयः.'

Page line

- 444, 29, for 'उद्गतसंचलित,' read 'उद्गतसंचलितं.'
- 445, 33, for 'सापिच,' read 'सेपिच.'
- 446, 26, for 'यज,' read 'यज.'
- 34, for 'आश्वासेयुः,' read 'आश्वास्यु.'
- 464, 5, from bottom, for 'variety,' read 'rarity.'
- 466, 33, from top, for 'two,' read 'the.'
- 34, from top, for 'two,' read 'so.'
- 536, 2, for 'MacCullack,' read 'McCulloch.'
- 537, 6, from bottom, for 'Sheer Muhammad Minad Bey,' read 'Mír Muhammed Murád Bey.'—(By some inadvertence this form was sent to press before it had been read by the editor.)
-

LIST OF PLATES.

	<i>Page</i>
I.—Inscription on the Kuhaon pillar,	37
II.—Facsimile of an Inscription at Iskardo,	39
III.—Copperplate grant from Bákerganj,	44
IV.—Pillar at Jajápur,	54
V.—Garuda and Ruins at Do.	<i>ib.</i>
VI.—Map of Central India,	82
VII. & VIII.—Fossil shells, &c. from Chirra,	<i>ib.</i>
IX.— <i>Ficus elastica</i> ,	132
X.—Facsimile of the Dhauli or Aswastama inscription.	434
XI.—Plan and specimen of the Girnar inscription.	219
XII.—Suráshtra Coins, to face page	346
XIII.—Sanskrit Alphabet, consonants of various ages.....	276
XIV.—Vowels of ditto....	<i>ib.</i>
XV.—Sanskrit inscription from Girná, No. 1.	334
XVI.—Talaín inscription on Arracan bell, to face.....	294
XVII.—Map of Cochin-China,	317
XVIII.—Reg Ruwan; and map of whirlwind of the 8th May, page...	324
XIX.—Detail of Asoka inscription from Girná,	340
XX.—Sanskrit numerals,	348
XXI.—Plan and elevation of the Dhauli hill,	436
XXII.—Legend of Indo-Sassanian Coin,	420
XXIII.—Further inscriptions from Sanchi,	564
XXIV.—Brahmeswari inscription,	560
XXV.—Enlarged view of Dhauli elephant,	456
XXVI.—Hissar pillar, and Badrásir temple,	430
XXVII.—Coins of Eucratides and Spalirises,	638
XXVIII.—Bactrian coins, various,	650
XXIX.—Bates' medal-ruling machine,	656
XXX.—Inscription on Varáha image at Eran,	632
XXXI.—Ditto, on Bhimsen's pillar, at ditto,	634
XXXII.—Indo-Bactrian Coins,	1050
XXXIII.—Ditto, on iron pillar at Delhi, and stone from the Fort of Ghosi,	630
XXXVII.—Sculpture of Grameswara temple,	662
XXXVIII.—Sculptured stone near Jajipur and the Sinh at Kanarac, ..	680
XXXIX. } XL. } Different caves in the Udayagíri rock at Kundgíri near XLI. } XLII. } Cuttack,	683

	<i>Page</i>
XLIII.—The Arctonix ———, or <i>Bali Souar</i> ,	735
XLIV.—Sculpture on the frieze in the Ganésh Gurbha, represented in Pl. XL.	683
XLV.—Sketch of Badèswur temple,	828
XLVI. } To illustrate the report on Bidjeegurh coal fields,	846
XLVII. }	848
XLVIII. }	844
XLIX.—Tibet Pheasant,	864
L.—Elevation of Somnáth,	867
LI.—Interior of Somnáth,	868
LII. } Views of Girnár and of the Rock inscriptions there,	872
LIII. }	874
LIV. }	878
LV. & LVI.—Cyprinidæ,	942
LVII.—Sketch-map of Assam,	950
LVIII.—Mergui Coast and Islands,	1027
LIX.—Hexaprotodons,	1039
Ancient Patera from Badakhshán,	1047
LX.—Ancient Hindu Coins,	1052
LXI.—Ancient Coins from Oojein,	1054

JOURNAL

OF

THE ASIATIC SOCIETY.

No. 73.—January, 1838.

I.—*History of Cooch Behár, being an extract of a passage from Dr. BUCHANAN'S Account of Rungpur (Rangapura)*.*

[Revised and communicated by Major F. JENKINS.]

The history of this district is perhaps involved in still greater obscurity than that of *Dinajpur*. Almost the whole of it is included in the ancient Hindu territory of *Kamrup*, which extends east from the *Kurotoya* where it joined the kingdom of *Motsyo*, to† *Dikkorbasini* a river of *Assam*, which enters the *Brohmoputro* a little to the east of the eastern *Kamakhya*, which is said to be fourteen days' journey by water above *Jorehat* the present capital of the kingdom. I have not been able to learn, that the ancient Hindus mention any kingdom as intervening between *Kamrup* and *China*. Those whom I have consulted seem to think that *Kamrup* is bounded on the east by *Chin*; by which, however, it must be observed, is probably meant the country between the Indian and Chinese empires, for as *ABUL FAZIL* justly observes, the Chinese empire is the *Maha Chin* of the Hindus. He indeed calls *Pegu* the *China* of the Hindus; but in this he is only to be considered as mentioning for the whole, what was then the principal kingdom, as now we might say that the empire of *Ava* is the proper *China* of the Hindus; and in fact it now separates *Kamrup* from the Chinese or *Maha Chin*. On the north *Kamrup* extends to *Kongjogiri*, the frontier of *Madro*, the kingdom of *Sailyo*, which comprehends *Bhotan*; I have not, however, been able to learn where the mountain is placed, and the *Bhoteas* seem to have made large encroachments on the whole northern frontier of *Kamrup*. The southern boundary of *Kamrup* frontier of *Kamrup*, is

* *BUCHANAN'S* orthography is retained: he uses the short *o* for *a*, being the Bengáli pronunciation.—ED.

† This is the name of a temple on the *Brahmaputra* above *Sadiyá*, and nearly where the river issues from the hills.

where *Lakhya* river separates from the *Brohmoputro*, and there it is bounded by the country called *Bunggo*. *Kamrup* according to this description includes a portion of *Moymunsing* (north part of *Dacca R.*) and of *Srihotto* (*Silhet B.*) together with *Monipur*, *Jaintiya*, *Kachar* and *Assam*.

The earliest tradition concerning the history of *Kamrup* is that it was given by KRISHNO to NORAK, the son of the earth, (*Prithivi*.) This NOROK, although an infidel (*osur*) was for some time a favorite of the god, who appointed him guardian (*dwarpal*) of the temple of *Kamakhya* (granter of pleasure) who naturally presided over the region of desire, (*Kamrup*). This deity is by the Hindus considered as female, and her temple situated near *Gohati*, the place where NOROK resided, is still much frequented.

Kamrup is said to have been then divided into four *peths* or portions, which may naturally be expected to have appellations suitable to its name and tutelary deity. They are accordingly called *Kam*, *Rotno*, *Moni* and *Yoni peths*, alluding to desire, beauty and some circumstances not unconnected with these qualities, which our customs do not admit to be mentioned with the plainness that is allowed in the sacred languages of the east. In fact the country by the natives is considered as the principal seat of amorous delight, and a great indulgence is considered as allowable. I have not learned the boundaries of these divisions, but am told that *Rotno Peth* is the country now called *Vihar*.

NOROK did not long merit the favor of KRISHNO, being a great oppressor and a worshipper of the rival god SIB. He was put to death, and was succeeded by his son BHOGGODATTO. At the time of the wars which are said to have placed YUDHISHTHER on the throne of India, the prince engaged in the great contest on the losing side, and followed the fortunes of DURYODHON. There can be little doubt that this is the same person with the BIUGRUT of Mr. GLADWIN's translation of the *Ayeen Akbery*, "who came to the assistance of JIRJODHUN, and gallantly fell in the war of the *Mahabharut*." By ABUL FAZIL this prince is said to have been of the *Khyetri* (*Khyotrio*) caste, and this is supported by the opinion of the brahmans; but here a considerable difficulty occurs; for it is generally allowed, that BHOGGODATTO was the son of NOROK, who was not a Hindu. We shall, however, soon see that in *Kamrup* many other personages have been adopted into the princely race, whose claims to a Hindu descent are at best exceedingly doubtful.

BHOGGODATTO is said to have usually resided at *Gowahati*. The king of *Kamrup* is said occasionally to have fled from the bustle and cares of his capital, and to have sought the pleasures of retirement

at *Runggopur*, from whence its name, signifying the abode of pleasure, is derived. No traces of any buildings by BHOGGODATTO or his family remain in this district, nor is it probable that any remain in *Assam*, as the princes of the eastern parts of *Kamrup* continue even to this day, to dwell in huts; nor is there any reason to suppose, that his accommodation was superior; while his power, and probably the thickness of his forest, rendered fortifications towards the west unnecessary.

In the great war BHOGGODATTO fell by the hands of ORJUN, brother of YUDHISHTHER, but according to the *Ayeen Akbery* twenty-three princes of the same family continued to govern after his death. The authority of this work is, however, diminished by its supposing that these princes governed the whole of Bengal, which seems entirely without foundation. It is, however, very likely, and is said indeed to be mentioned in the Purans, that for some time the descendants of BHOGGODATTO retained the government of *Kamrup*. I cannot indeed adopt the chronology, which places YUDHISHTHER about 3200 years before the birth of Christ; on the contrary I am persuaded that this prince lived considerably after the time of ALEXANDER, for in every part of India there remain traces of the family of YUDHISHTHER, or of the princes who were his contemporaries, of many dynasties that have governed since his time, but all these later dynasties, so far as I have learned, may be ascertained to be of a comparatively late period; and making every possible allowance for the reigns of the families of YUDHISHTHER and of the dynasties that have succeeded, we shall not be able to place the former much beyond the time of AUGUSTUS. I am happy to acknowledge that I have derived this manner of reasoning on the subjects from a conversation with my worthy friend Major MACKENZIE of *Madras*, who has formed more accurate notions on Indian History than any person whose opinions I know,—notions founded on a careful investigation of the remains of antiquity, and not on the fictions of Indian poets, who in the extravagance of invention exceed even the fertile genius of Greece.

In the part of the *Yogini Tontro* which I have procured, and which is considered as the highest authority concerning every thing to *Kamrup*, the pandit of the mission says that there is no mention of BHOGGODATTO, but that the god SIB prophecies that after the infidel NOROK, and at the commencement of the era of Saka, that is about the end of the 1st century of our era, there would be *Sudro* kings of *Kamrup*. The first rája mentioned is DWYESWOR, in whose time the worship of *Kameswori* or *Kamakhya*, the knowledge of which had hitherto been confined to the learned, would be published even to the vulgar, and this would happen at the very beginning of the era of Saka, or in the year of

our era 76. This rája is said to have been of the tribe called in the Songskrito language *Dhwor*, which is usually applied to the *Kaibortos* of Bengal; but it may be doubted, whether the prince belonged to that tribe which is not one of *Kamrup*. The worship of the *linga* according to the prophecy would begin in the 19th year of *Saka*; some indefinite time after that period, a brahman born of the *Korotoya* river and named *NOGOSONKOR*, would be king, and extend the doctrine. After him, but at what interval is not mentioned, would be a rája named *JOLPESWAR*, who would still further encourage that worship, and who would build the celebrated temple of *Jolpis*. Very considerable ruins are at no great distance from that place as will be hereafter described; but they are ascribed to a *Prithu*, who may, however, have been a person of the same family.

This *Prithu* rája from the size of his capital, and the numerous works raised in the vicinity by various dependents and connections of the court, must have governed a large extent of country, and for a considerable period of time. Although he is in some measure an object of worship among the neighbouring Hindus, they have few traditions concerning the place from whence he came, nor at what period he lived; and I heard it only mentioned by one old man, that he governed before the time of the dynasty which will be next mentioned.

As usual he is considered as having been a very holy personage, who was so much afraid of having his purity sullied, that, on the approach of an abominable tribe of impure feeders named *Kichok*, he threw himself into a tank, and was followed by all his guards, so that the town was given up to plunder, and the family ceased to reign. At present the *Kichok* are a kind of gipsies, that are thinly scattered in the northern parts of India, and live by snaring game, telling fortunes, and it is usually supposed by stealing. It must, however, be observed, that this tribe, which in the Songskrito language is called *Kirat*, would at one time appear to have been really powerful in this vicinity; and according to the *Yogini Tontro*, was not reduced to its present miserable state, until the time of *VISWO SINGHO*, who will be hereafter mentioned.

There is also a tradition in the country, that a much greater portion of *Kamrup* formerly belonged to the *Bhoteas* than docs at present. I am inclined to think, that these *Bhoteas* were really the Chinese, whose histories, I believe, mention their conquests in this part of India, and might naturally be confounded with the *Bhoteas*, from their impure feeding and from having made their attack through the country of that people.

It would not appear, that during the dynasty of *ADISUR*, any part of this district was comprehended in the Hindu kingdom of Bengal. On

the contrary, about that time, or not long after, the western parts of this country, as far as the *Brahmoputro*, seem to have been subject to a family of princes, the first of whom, that has left any traces, was DHORMO PAL. Whether or not from his name we may suppose that he was one of the PAL family, which preceded the dynasty of ADISUR, who in the wreck of his family may have saved a portion, I shall not venture to determine. From the works that are attributed to DHORMO PAL, he would appear to have been a person of some power, and even the works attributed to relations and dependents of his family, possess some degree of magnitude. He is said to have had a brother named MANIKCHONDRO, who seems to have died early, and to have left the management of his son and estate to his wife MOYNAWOTE. This lady makes a conspicuous figure in the traditions of the natives, and is said to have killed DHORMO PAL in an engagement near the banks of the *Tista*; at least the rája disappeared during the battle between his troops, and those of his sister-in-law. MOYNAWOTE'S son GOPICHONDRO succeeded his uncle, and seems to have left the management of his affairs to his mother, and for some time to have indulged himself in the luxury of 100 wives, among whom the two most celebrated for beauty and rank were HODNA and PODNA, one of whom, if not both, was the daughter of a person of considerable rank named HORISCHONDRO. When GOPICHONDRO had grown up, and probably, when he had been satiated with the pleasure which women bestow, he wished to interfere in business. His mother had then the art to persuade him to dedicate his life to religion; and having placed him under the tuition of her spiritual guide (*guru*) HARIPA a religious mendicant, (*yogi*) of remarkable sanctity, this prince, changed from voluptuousness to superstition, adopted the same manner of life with his instructor, and is supposed to be now wandering in the forests. The people of *Kamrup* are still frequently entertained by the songs of itinerant bards of the low castes called *yogi*, who repeat the poem called *Sibergit*, which gives an account of GOPICHONDRO, of his pious resignation of power, and the lamentations of his hundred wives, who by no means approved of his change of life. This song is in the vulgar language, and its repetition occupies four or five Hindu hours for two days.

As the father is praised by the Hindus for his piety, his son HOROCHONDRO, or BHOVOCHONDRO as his name is here more usually pronounced, is given as an example of stupidity, who with his minister GOVOCHONDRO did nothing like other people, and turned night into day, and day into night. Many examples of their stupidity are related to serve as amusement to the youth of Bengal; but the rája seems to have lived

in considerable splendour, and without fear, while the works of his relation SORA and of his tributary BENNA show, that his dependents had considerable power, and did not require fortresses to enable them to live in security. After the death of BHVOCHONDRO there came a *Pala rája* of the same family who is said to have been destroyed by a dynasty that I shall have next occasion to mention, although it is more probable that a period of anarchy intervened.

The princes of the dynasty of DHORMO PAL are supposed to have been *Khyotriyos*; yet this seems doubtful. The lady MOYNAWOTE had not a brahman for a spiritual guide, but this important office was held by a *yogi*, that is a *Sudra* dedicated to a religious life; and there is great reason to believe that the *yogis* who repeat the songs, are descendants of this kind of priesthood, who were degraded by SONGKOR ACHARYO, and who reject the brahmans as spiritual guides, although in order to procure a miserable existence they have now betaken themselves to weaving, burning lime, and other low employments. In the south of India they collect and vend drugs, and pretend to practise physic, but are equally obstinate in rejecting the instruction of the sacred orders.

With regard to the next dynasty there is greater certainty, although as usual the chronology is attended with many difficulties. According to tradition there was a brahman whose name is unknown, but who had a servant that tended his cattle, no one knows where. According to some this servant was an infidel (*osur*) most probably from the mountains of *Tripura*; but concerning this different persons are not exactly agreed, and some allege that it was his mother who was of the impure race, and that she bore her son while in the service of the brahman. Many complaints were lodged against this fellow, and his master one day was desired to view him asleep while his cattle were permitted to destroy the crops of the neighbours. The brahman was advancing with a determination to bestow the merited punishment, when he observed the lines on the naked feet of his servant, and immediately by his profound skill in the most noble science of *Samudrik Jyotishi*, knew that the sleeper would become a prince. On this discovery the brahman paid him all due respect, rendered it unnecessary for him to perform any low office, and shewed him still more kindness by disclosing the certainty of his future greatness; the servant in return promised that when he became a prince, the brahman should be his chief minister, (*Patro*). Accordingly some time afterwards, it is not known how, he became king, and is said to have destroyed PALA, the successor of HOROCHONDRO. This, however, as I have before observed, is rather doubtful; and *Kamrup* in the interval had probably fallen into a state of anarchy favorable

for an upstart, and was overrun by various rude tribes, *Koch*, *Mech*, *Garó*, *Kachhari*, *Rabha*, *Hajong*, *Tripura*, *Bhot*, and *Nepcha*, who neither spoke the language of Bengal, nor had adopted the religion of the brahmans, although numerous fugitives had taken refuge from the violence of Sultan JALALUDDIN, as mentioned in my account of *Dinajpur*, and had diffused some degree of instruction, or at least had preserved the little improvement that had been made in former dynasties.

The new rája seems to have been much guided by his minister the brahman, assumed a Hindu title *Nilodhwoj*, and placed himself under the tuition of the sacred order. For this purpose a colony of brahmans were introduced from *Maithilo*, and from thence we may perhaps infer the country of the minister. There is no trace of any earlier colony of brahmans in *Kamrup* than this from *Maithilo*, and the great merits of the prince were rewarded by elevating his tribe called *Khyen* to the dignity of the pure Hindu. It is, indeed, contended by RAJBONGSIS, that NILODHWOJ was of their caste, and that the *Khyen* were only his servants, begotten by RAJBONGSIS on prostitutes of the *Khyotriyo* tribe; but it seems highly improbable that the rája would procure the dignity of pure birth for the illegitimate offspring of his servants, while his own family remained in the impure tribe of RAJBONGSI, the origin of which seems to me of a later date.

The rája having settled his government built a city called *Komotapur*, and his successors took the title of *Komoteswor* or lords of *Komota*, while the title of *Komoteswari*, or lady of *Komota*, was bestowed on the family deity, a female spirit, as usual, delighting in blood.

As each rája of this family claimed his right to govern on the authority of some miracle, it was discovered by CHOKRODHWOJ, the second prince, that BHOGODATTO had received from SIB an amulet (*keboj*) which rendered him invulnerable, and which he usually wore on his arm. In the hurry of preparation for battle, this amulet had been left behind, on the day when BHOGODATTO was killed, and lay concealed near *Hastinapur* until the time of CHOKRODHWOJ, when this prince was informed in a dream how the amulet might be found, and that it was to be worshipped as representing *Komoteswori*, as it is to this day.

During this dynasty the office of chief minister (*Patro*) seems to have been hereditary as well as the regal dignity, and the brahman and his descendants occupied a fortress contiguous to the walls of the city; but the government does not seem to have been very secure, as not only the royal palace and the residence of the minister, but several houses of inferior personages seem to have been fortified, although situated within the immense works by which the city was surrounded.

CHOKRODHWOJ was succeeded by NILAMBOR, the third and last prince of the family. His dominions are said to have extended over the greater part of *Kamrup* and included part of *Motsyo*; for the fort at *Ghoraghat* is said to have been one of his erecting. Numerous public works, especially magnificent roads, are attributed to this prince, who from thence seems to have governed his country with attention, but the circumstances related concerning his overthrow are accompanied with traits of the most savage barbarity.

Whether from a natural suspiciousness of temper or from an uncommon accuracy of observing such circumstances, the rája on entering his women's apartments one day observed traces, which convinced him, that a man had been there. He was immediately inflamed with jealousy, and having sent people to watch, a young brahman, son of SOCHI POTRO the prime minister, was soon caught attempting to enter the royal apartments and to dishonor his master. He was taken before the king, put privately to death, and part of his body was prepared for food. His father, having been invited to a grand entertainment given by the king eat of his son's body; for in *Kamrup* the brahmans are allowed great liberties in their diet. After he had satiated himself with this monstrous food, the king showed him his son's head, and informed him of the crime and of what he had been eating. The minister is said to have acted with a presence of mind well suited for such an occasion. He said, that his son had no doubt deserved any punishment; but as the king had made him eat such a horrid repast, that he could no longer continue in his service, but would retire from the world, and dedicate himself to the duties of a religious mendicant. By this stratagem he was allowed to retire, and having assumed the habit of a *sonnyashi*, immediately left *Kamrup*. His first object now was to procure revenge, and he proceeded without delay to *Gawr*, when he laid before the Moslem king information, that was followed by an attack on NILAMBOR. For some time however the invasion did not seem likely to terminate in success; for after a siege of 12 years the Moslem had made no impression on the works of *Komotapur*. Although the length of the siege is probably exceedingly exaggerated by tradition, its issue probably continued long doubtful; for the invading army had evidently fortified its camp with much care. The place is said to have been taken at length by stratagem, or rather by the most abominable treachery. The Muhammadan commander informed the king by message, that having lost all hopes of taking the place, he was desirous of making peace, and leaving the country on the most friendly terms. This having been accepted, it was proposed that the ladies of the Moslem chiefs should pay their respects to the queen. This

also was received as a mark of polite attention, and a number of covered litters were admitted into the women's apartments within the citadel. In place of Moslem ladies these litters contained arms, and the bearers were soldiers, who immediately on gaining admission seized their weapons, and secured the person of the rája, who was put into an iron cage in order to afford amusement for the sultan and populace of *Gaur*; on the way he contrived to escape, and has ever since remained concealed.

The Muhammadans of *Ghoraghat* attribute the destruction of *NILAMBOR* to their favorable saint *ISMAEL G'AZI* of whom I have given an account in the report concerning *Dinajpur*. By the Moslems of this district he is considered as a chief of saints, and several places of worship are erected to his memory, or over precious relics that belonged to his person. But this reverence has probably induced them to magnify the conquests of *ISMAEL* who governed *Ghoraghat* in the reign of *NASRAT SHÁH*; a prince whose reign commenced about the year of our era 1523, which seems to be somewhat too late for the destruction of *Komotapur*.

In the manuscript account of *Bengal*, which I procured at *Maldeh*, it is said, that the sultan *HOSEYN*, immediate predecessor of *NASRAT*, conquered *Kamrup*, and killed its king *KARUP NARAIN*, son of *MAL-KONGYAR*, son of *SADA LUKHYMON*, and I have no doubt, that these are the same persons with the three princes of *Komotapur*; for the Hindu rájas have so many titles, that one person may choose to call them by a name totally different from that which another person may choose to employ; and the time of the events will not admit of our supposing that a dynasty intervened between that destroyed by *HOSEYN*, and the one which now governs the small portion of *Kamrup* that retains some degree of independence.

In the short account of *Assam* published in the 2nd volume of the *Asiatic Researches*, which seems to me more accurate than the commentator is willing to admit, it is stated, that *HUSEYN SHAH*, a king of Bengal, undertook an expedition against *Assam*, in which he had at first considerable success. The rája retired to the mountains, and the son of the king was left with a large army to keep possession of the country. In the rainy season the rája descended into the plains, and destroyed the whole invading army, who were all either killed or made prisoners (*A. R.* II. p. 180). It was probably this rash expedition, which frustrated the conquest of *Komotapur*, and rendered it necessary for the Moslems to retire, after a possession of one or two years. Indeed the traditions of the Hindus state, that they made no stay at *Komotapur*, but retreated

immediately with what booty they could procure. This, however, seems improbable, and I shall have occasion to show, that within the walls of *Komota* there are probable traces of the Moslems having begun very considerable works, which have been broken off unfinished; it is therefore probable that *NILAMBOR* was destroyed by *HOSEYN SHAH* in person, and he begun to reign about forty years before the usurpation of *SHER SHAH*, or about the year 1496 of our era. The conquests therefore of *ISMAEL G'AZI* must be confined to the vicinity of *Ghoraghat*, and perhaps he did no more than retain these small portions of the conquests made by the sultan *HOSEYN*, where he founded the city named after *NASRAT*, the successor of that prince.

The overthrow of *NILAMBOR* is looked upon by the natives as a most unfortunate event. In the *Yogini Tontro*, it is told, that in the time of *NOROK*, a most holy person, *VOSISHTHO MONI* went to the temple of *Kamakhya* and was refused admittance by the infidel guardian. As such persons conscious of their worth are sometimes apt to be a great deal too irascible, *VOSISHTHO* prayed that the temple might be deprived of all dignity, which accordingly would have immediately happened, had not the goddess of love (*KAMAKHYA*) made a complaint to *SIVA*, who although he could not entirely prevent the effects of the holy man's imprecation (*sang pon*); yet postponed the completion until the destruction of *Komotapur*, and he ordered, that this degradation should continue only until the restoration of the *Komoteswar*, who, as I have said, is supposed to be still alive, and his return is anxiously and eagerly expected by the people of *Kamrup*, as some of the events which are prophecied to precede the restoration, have already come to pass. On that happy occasion the goddess of delight will be restored to full glory, and the four nations of usurpers who now share *Kamrup*, will be extirpated by mutual slaughter. These nations are the *Ploo!* or *Bhoteas*; the *Saumar* or *Assamese*; the *Kuwach* or *Koch*, who govern *Vihar*; and the *Yovew* or barbarians of the west, who, according to the authority of the *Yogini Tontro*, are descendants of *HAIHOYO* and *TALOJONGGHO*, two *Khoyotriyos*, who on account of cowardice were degraded and prohibited from eating pure food, and from following the doctrine of the *Vedas*.

Two brothers named *CHONDON* and *MODON*, after the overthrow of *NILAMBOR*, established a short government of eight years at a place called *Noroloras*, which now is under the government of the *DEB rája*, and is about thirty miles north from *Komotapur*. This power was not only transient, but seems to have extended to no great distance, and the parts of *Kamrup* that were not retained by the Moslems, seem to have fallen again into anarchy under the chiefs of the rude tribes, which I

formerly mentioned. Among these by far the most powerful were the *Koch*, who had a number of chiefs, at first independent, but who gradually united under the authority of one of themselves named HAJO. He seems to have been a person of great vigour, and reduced under his government the whole of this district except *Ghoraghat*, together with most of that portion of *Assam* which is included in the government of *Gohati* or *Kamrup*. He had no children, except two daughters HIRA and JIRA.

HIRA, before the rise of her family, had been married to a certain HERYA, who is said to have been of the impure tribe called *Mech*. Whether JIRA was married or not is not known, but she had a son named SISU, while her sister bore a son named VISU. The former is said to be ancestor of several branches of the family that are now subject to the company; but VISU succeeded to the whole power of his grandfather. As he was not contented with the instruction of the *Kolitas*, who seem to have been the original priesthood of his tribe, nor with the learning of the brahmans of *Maithilo*, who had been formerly introduced, he procured some men of piety (*Baidiks*) from *Sri-hotto*, and gave them the title of *Kamrupi* brahmans, and these form the second colony of the sacred order that has settled in this country.

To this era may probably be referred the composition, or as the Hindus would say the publication of many, or most of the books called *Tontròs* which are supposed to have been communicated by the god SIVA to his wife PARBOTI about 5000 years ago. One of the most celebrated of these compositions the *Yogini Tontro* I am indeed informed, mentions the amours of HIRA and the government of her son; nor is there any doubt that *Kamrup* is usually considered as the grand source of this system of magic, and the period between the time of VISU and of his great-grandson PORIKHYIT seems to have been the only period, when the learning of the brahmans flourished in that country. The doctrines contained in these works admit of many indulgences necessary for new converts, and to enable the brahmans to share in the pleasures of a most sensual people; and they inculcate chiefly the worship of the female spirits that are appeased with blood, which was the original worship of the country, and which has now become very generally diffused among the brahmans of Bengal, with whom these *Tontròs* are in the highest request.

It was now discovered that the rája was not a son of the poor barbarian HERYA; but that his mother although born a *Koch*, was not only of a celestial origin, but had been the peculiar favorite of the god SIVA; who had passed much time in amorous dalliance with the damsel, and was the actual father of the prince, who took the name of VISWO SINGHO,

and bestowed on the son of his aunt JIRA that of SIVA SINGHO; and this prince also claimed for his mother, the honor of the most intimate favor of the god, whose name he bore.

Although the *Yogini Tontro* calls the father of HIRA a barbarian (*Mlechchho*); yet it has been discovered, that the *Koch* were not in fact an impure tribe, as had been in general supposed; but were descended from some *Khyotriyos*, who had fled into *Kamrup*, and the adjacent country of *Chin*, in order to escape from the violence of POROSURAM, when that deity pursued the kings of the earth, and gave their territories to the brahmans. In the exile the descendants of the *Khyotriyos* had departed from many parts of the Hindu law; and on this account were considered impure. This seems to be exactly the same story, which Sir WILLIAM JONES quotes (A. R. II. page 368), from the Institutes of MENU, and on the authority of which he deduced the origin of the Chinese from the Hindus. The features both of Chinese and *Koch* seem to me insuperable objections against that theory; and I have no doubt, that both the passage of Menu and the fable of the *Koch* are equally founded on national vanity, which, however unbecoming in a lawyer or philosopher like MENU, is excusable enough in the *Koch*, who among the people with whom it is their fortune to live, are naturally desirous of procuring some means of being raised from the dregs of impurity. On this pretended descent the *Koch*, or at least all of them that have adopted the Hindu religion and have relinquished their impure practices, assume the title of *Rajbongsis*, or descendants of princes; and the other rude tribes of *Kamrup* and *Chin*, such as *Mech* and *Hajong*, who have followed their example in religion, have assumed the same title. All the descendants of HIRA, still farther elated by their supposed divine origin, assume the title of *Deb* or Lord, and all the reigning princes of the family claim the title of *Narayon*; which among the Hindus is one of the names of the supreme deity.

VISWO SINGHO was so weak as to divide his dominions between two sons NARO NARAYON and SUKLADHWOY. The former obtained the country west from the *Chhaunokosh*, the latter obtained the country east from that river, together with both sides of the *Brohmoputro*. I shall now proceed to give an account of this branch of the family which was the most considerable.

SUKLODHWOY seems to have governed without any remarkable event, and left his dominions to his son ROGHU DEV NARAYON. He had two sons PORIKHYIT N. and another*, who as an appanage obtained *Dorong* which his descendants still retain under the kings of *Assam*. PORIKHYIT

* BOLLIF NARAYON.

however, prudently retained the sovereignty of the whole, and lived at *Gilajhar* on the west side of the *Godadhör* where the only remains to be seen, although the place is also called *Atharo Kotha*, or eighteen castles, clearly evince the small improvement which his people had made in the arts; but his court seems to have flourished in learning, and 700 brahmans are said to have resided at his capital.

When ABUL FAZIL composed the *Ayín Akbery*, the sub-division of the kingdom of VISWO SINGHO was not known at *Delhi*; although in all probability it had recently taken place. From prudential motives it had perhaps been carefully concealed, and the two branches of the family lived in an amity that was absolutely necessary for their safety. ABUL FAZIL says that “north from Bengal is the province of *Cooch (Koch)* the chief of which commands 1000 horse and 100,000 foot (the usual oriental exaggeration). *Kamrup*, which is also called *Kamtah (Komota)* the old capital) makes a part of his dominion.” Soon after this, however it is said, that the Muhammadan governor of *Dhaka* discovered the real state of affairs, and became very urgent with PORIKHYIT for tribute. The rája being afraid did not absolutely refuse to comply, but in order to procure favorable terms was advised to undertake a journey to *Agra*, where he was kindly received, and procured an order from the king, directing the governor to take whatever tribute the rája chose to offer. On returning to *Dacca*, the rája who was totally ignorant of human affairs, and of the immensity of the sum offered 20,000,000 of rupees and returned to his capital highly satisfied with his conduct. When his minister (*Patro*) explained to him the nature of the promise which he had made, the poor rája was thrown into consternation, and again set out for *Agra*, taking his minister with him, in order to avoid such mistakes. Unfortunately he died by the way and the Moslems, in the mean time, took possession of the country, in order to recover the money that had been promised*. The minister proceeded to court, where after some trouble he was appointed kanungoe or register of the country, which was divided into four sirkars. *Uttro Kul* or *Dhengkiri* north of the *Brohmoputro*, *Dokhin Kul* south of the same, *Benggalbhumi* west of the *Brohmoputro*, and *Kamrup proper* called so as containing *Gohati*, the most ancient capital of the country. The brother of PORIKHYIT was confirmed in his government of *Dorong*, and CHONDRO NARAYON, the son of the unfortunate rája, received very large estates which his descendants still retain as subjects. These I shall afterwards have occasion to mention. Large estates were also given to the new kanungoe from whose family papers these accounts are taken.

* PORIKHYIT'S descendants are the rájas of *Bijnse* according to the records of the Durrang family.

The Moslem army took possession of the country about the year 1009 of the Bengal era, that is A. D. 1603 or two years before the death of AKBER. A Mogul general (Fouzdar) resided at *Ranggamati*, and the country is said for many years to have undergone considerable improvements, especially under the government of a certain noble Hindu named MANOSINGHO.

The usual desire of encroachment, however, induced the Moslems in the reign of AURUNGZEBE, to invade *Assam*, the limits of which were then very narrow, but the people were fierce of their independence, were invigorated by a nourishing diet and strong drink, and their princes still retained their energy of mind and had not sunk under the enervating and unceasing ceremonies of the Hindu doctrine. The Mogul army under MEER JUMLA was completely destroyed, and they were compelled to cede to the Assamese the whole of Sirkar *Kamrup*, and a portion of *Uttorkul* and *Dokhyin Kul*, which have ever since been placed under the management of a great Assamese officer, and form the government of *Kamrup*, which is about a third part of the whole kingdom. After a residence of 73 years, the Muhammadans withdrew the (*Foujdari*) government of *Ranggamati*, and placed the station of the governor of the frontier at *Ghoraghat*, as I have mentioned in my account of *Dinajpur*. Still, however, an officer dignified with the title of Nawab resided at *Ranggamati* with some troops; but it seemed to have been the wish of the Mogul government to encourage the growth of forests and reeds, which might serve as a check to the incursions of the Assamese; and nothing was required of the chiefs descended from PORIKHYIT, nor from the zemindars of the hilly countries, but a tribute in a great measure nominal.

The conversion of the kings of *Assam* to the doctrines of the brahmins of Bengal, which happened soon after the overthrow of MEER JUMLA seems to have put a total stop to their enterprise, and the petty chiefs, who remained nominally under the authority of the nawab of *Ranggamati*, would have been entirely uninterrupted in cutting each other's throats, and in reducing the country to a desert, had not they been assisted by the *Bhoteas*, who brought several of them under their authority and continued advancing, when the Company's gigantic power put a stop to all petty attacks of that nature. A tolerably settled frontier has been obtained; there are some appearances of a regular government, and cultivation is beginning to revive, although it is still much retarded by the constant squabbles of the chiefs, and the liberty which they take of dictating to all who reside on their property.

I shall now finish this historical view with an account of the western division of VISWO SINGHO's dominions, which fell to the share of his son

NORO NARAIN. This division comprehended the whole northern parts from the *Chhonnokosh* to the *Mohananda*, and from Sirkar *Ghoragehat* to the mountains of *Bhotan*, being a very fertile tract of country about 90 miles from N. W. to S. E. and 60 miles from N. E. to S. W. The north-west extremity of this territory was settled on the descendants of SIVO SINGHO the son of JIRA, the grand-aunt of NARO N. from among whom the rajas were bound to choose their chief ministers (*Raykot*). This portion, as producing an income of 32,000 rupees a year, was called *Botrishazai* (*Batis hazari R.*) but the general name given to the principality was *Vihar*, as having been the scene of the voluptuous intercourse between SIVA and the daughters of HAJO. In order to distinguish this *Vihar* from the large territory of the same name near *Patna* it has been usual to call it *Koch Vihar* (*Coos Beyhar, RENN.*); but all remembrance of the *Koch* is disagreeable to its princes, and at their capital all additional appellations given to *Vihar* are considered as exceedingly uncourtly*.

The following is the succession of these princes; but among these after the fifth generation are some sons by adoption, and some co-lateral, and it is alleged illegitimate successors, of which I have been able to procure no satisfactory account: 1st NORO N., 2nd LOKHYMI N., 3rd VER N., 4th PRAN N., 5th MOD N., 6th VOSUDEV N., 7th MOHINDRO N., 8th DINO N., 9th RUPO N.†, 10th UPENDRO N., 11th DEVENDRO N., 12th DHAIRJYENDRO N., 13th RAJENDRO N., 14th DHOENDRO N., 15th VIJENDRO N.‡, 16th KHOGENDRO N.§, 17th HORENDRO N., the

* The name of *Kusha vihar* is doubtless derived, though the people now know nothing of it, from the Buddhist monastery or *vihara* which existed there in ancient times, as did the province of *Behár* from another monastery near *Gaya*, or at *Behár*.

We know from M. CSOMA'S *Life of SHAKYA* (As. Res. XX. 310), that this MUNI died at *Kusha* the capital of *Kamrup*, (so called from the *Kusha* grass for which it was famous:) and that the *Chaitya* "of the head ornament" was distant about four miles from the pair of *sál* trees near this town, under which he expired (p. 311); for says KUNGAVO—"in all the space from the city of *Kusha* to the river *Yig-dan*, (the *Toresha*?) from the grove of the *sál* trees to the *Chaitya*, 12 miles in circumference, there is not a single spot which is not occupied by wise gods of great power—some rolling on the ground, some wringing their hands, uttering ejaculations, some oppressed by great sorrow, sit still, and some depending on religion say, 'The lord who instructed us in many things that were pleasing, agreeable and delightful to the heart, has been delivered from pain!' It would be very desirable to examine the site and remains of the *Kusha-vihara* minutely, as it can hardly be doubted that the place whose champions contended for the possession of *Buddha*'s relics with the eight chief powers of India, must have been at that time, and long after, a town of great importance. The rich valley of *Assam* was probably then what it seems again destined to become in a few years.—ED.

† An usurper, only reigned a few days or weeks. ‡ DHAIRJYENDRO N. restored?

§ KHOGENDRO, was the *Nazir deo* who actually governed the country but never assumed the title of raja.

reigning prince. By the natives he is considered as a very pious person, for he pays no attention to business, but passes the whole of his time in retirement and as is supposed, much of it in prayers ; and as he lays out much money in supporting men dedicated to a religious life, of course his temporal affairs are not flourishing, and his people would probably suffer less, were he more attentive to their government ; for he is said to be desirous of rendering justice. At present the whole management of the country is left to strangers, who are alleged to be mere sharks, but all the chiefs of the *Rajbongsis* are like their prince ; no one is said to be either able or willing to attend to business. It is supposed by the natives that the gods have bestowed an extraordinary reward on the virtue of the rája. He has 50 wives, and it is commonly reported, and gravely asserted to be believed, that all these ladies have often, in the course of one day, received the most intimate proof of the rája's affection and extraordinary vigour. The accounts which I have heard of this chief from Europeans, who were all acquainted with him, differ a good deal from the above, and represent him as a poor creature exhausted by drunkenness and debauchery.

The *Vihar* rájas reckon by the era of their ancestor VISWO, and suppose that he began in the Bengal year 916 or A. D. 1509. This is scarcely reconcilable with the supposition that HOSEYN SHAH destroyed *Komotapur* after a long siege, as he began about 1496 ; especially if we suppose, that a long anarchy took place between the governments of NILAMBOR and VISWO. I can only suppose that HAJO immediately after the retreat of the Moslems began to acquire great power, and that the era begins with the independence of the country, in place of being reckoned from the reign of VISWO, the impure HAJO being considered by the descendants of the gods as an unworthy connection. It must farther be observed, that from an inscription on a temple erected by PRAN NARAYON, the great-grandson of VISWO, that prince was alive in the year of *Sakadityo* 1587 or A. D. 1665, so that five reigns according to the era of VISWO, occupied 156 years while the thirteen following reigns have only occupied 144 years. It must be also observed, that the era of VISWO does not appear to have been in use in the year 1665, and is a recent invention which can have no great authority ; yet I do not think it much antedated, as the government of PORIKHYIT, a great-grandson of VISWO, was destroyed in the year 1603.

After the division of their territory into two principalities, the *Koch*, sensible of their weakness, are said to have erected a line of fortifications along their southern frontier. This still remains, and is attributed to MOD, the 5th prince of *Vihar*, but it proved an effectual protection to

his part of the country for only a very short period. About the beginning of the 18th century the Muhammadans, under the command of a certain EBADUT KHAN, were able to wrest from his descendants the districts which in the Bengal atlas were called *Boodah* and *Rungpur*; and, as if they had conquered the whole, erected them into a new sirkar called *Koch Vihar* or *Kochar*. Indeed it comprehends at least a third of the whole principality, and that by far the most improved, although this is probably owing, in a great measure to its change of masters.

The confusion that ensued in the Mogul government secured the *Vi-har* family from farther encroachment on that side, but their reduced state now exposed them to the depredations of DEV rája who deprived them of one half of their remaining territories. The attack indeed was on the point of proving entirely ruinous, when DORPO DEV the *Raykot*, or hereditary minister, having laid aside all regard to his duty, rebelled against his sovereign and kinsman. He entered into an alliance with the DEV rája, and ceded to him a considerable portion of the *Botris-hazári*, on condition of being supported in overthrowing the rája, to whose title in fact there were some objections. Having procured troops from *Bhotan* he invaded *Vihar*. The rája in despair* applied for assistance to the Company, and to secure protection engaged to pay one half of his revenue. Accordingly in 1772 Captain JONES with a battalion of sepoys routed DORPO DEV, who took refuge in *Bhotan*. Captain JONES followed and in 1773 took the fortress of *Dolim Koth*, on which the DEV rája and DORPO sued for peace. This was granted, and the parts of *Botris-hazári* that had not been ceded to *Bhotan*, were restored to DORPO; but he was placed exactly on the same footing as an ordinary zemindar, and a revenue was fixed on his lauds, while he lost all authority in the remnant of *Vihar* which does not now exceed one-third of its original dimensions, and pays as a tribute what is supposed to be one half of its net revenue. In settling the frontier great favor and lenity seem to have been shown to the Bhoteahs, probably with a view of gaining their friendship in an expectation of commercial advantages, that would appear to be chimerical; some favor, however, has also been shown to the rája. When the Moslems settled their new conquest of sirkar *Kooch Vihar*, they gave the zemindaries, or management of the soil, to various officers and servants of the rája, by whose treachery they probably had been assisted. Among these, three considerable estates were in the possession of a branch of the family, from among the members of which the *Nazir deo* or commander of the troops, was always ap-

* The rája was carried off by the *Bhoteas* and the *Nazir deo* applied to the English Government.

pointed ; and these estates had been granted as a part of the means by which the expense of the army was to be defrayed. The descendants of the *Nazir deo* had enjoyed these estates from the time of the Moslem conquest, but on the British army being bound by treaty to defend the country, the rája represented that he had no occasion to support a military establishment, and that therefore the general had no pretence for keeping lands to enable him to maintain soldiers. It has been thought just to allow the rája to enjoy these estates as a zemindar, and to receive whatever profits may be derived from their management. The possession which the *Nazir deo* had obtained from the Moslems seems to render the case doubtful ; but the claim of the rája is certainly possessed of great weight*.

* In 1788-89, Messrs. MERCER and CHANNET were appointed to investigate amongst other matters, the respective claims of the rája and *Nazir Deo*. From the documents presented to them there does not appear to be any grounds for supposing that the Moslems had any thing to do with the partition of the country into three estates between the Rája, the *Nazir Deo*, and *Dewan Deo*. For some generations the rájas had been appointed by the *Nazir Deo*, and it was acknowledged to the commissioners that the *Nazir Deo's* sanction was necessary to give validity to the enthronement of the rájas. The *Nazir Deo* claimed a 9 anas 10 cowry share in the ráj, and though this may seem exorbitant, yet considering the power of the *Nazir Deos* as commanders in chief, it may be believed that the rájas, who were entirely indebted to the *Nazir Deos* for their thrones, had voluntarily submitted to the considerations proposed by the *Nazir Deos*. The commissioners gave no opinion on the respective claims, but merely submitted the evidence collected by them to Government. Amongst the documents submitted, are the accounts of receipts and disbursements of the ráj from 1181 to 1189 B. E. or during the period of the reigns of the two preceding rájas and the two first years of the reign of the present rája. In these accounts the collections are entered in the names of the three sharers according to their respective shares, and the disbursements are made in the same manner. The Company's tribute, which is expressly for the maintenance of troops, and the pay of the retained *Sehodies*, are thus made general charges against the three sharers, not against the *Nazir Deo* alone ; and in the same manner are charged all the Durbar charges and charges of the courts, not against the rája's share only. This seems to disprove the rája's claim. For many years these claims were under discussion with our Government, and the *Nazir* was obliged to be satisfied, until they were settled, with a small estate and 500 rupees a month. At length the Government on a discovery of the rája's independence, and the *Nazir Deo's* subjection to him, declined to interfere and referred the claims to the justice, equity, and good conscience of the rája. It seems needless to add, that the *Nazir Deo's* claims are still in abeyance, but the rája has ever since been endeavouring to recover half the estate settled on the *Nazir Deo* through the intercession of the British Government—F. J.

List of Rájás of Cooch Behár of the SEEBO BONGSO, or Siva Dynasty.

1510. BISSO SINGH—Founder of the dynasty, and said to be of divine origin; his brother SEESO SINGH ROYCOT, was the ancestor of the *Bykuntpur* rájás.
1553. NORNARAIN, son of BISSO SINGH, whose younger brothers were SOOKLADUDGE, CHILLARAI and NORSINGH. The two first appear to have invaded *Assam*, and the present rájás of *Durrung Bijnee* and *Beltollah* trace their descent from SOOKLADUDGE; from the third brother are descended the rájás of *Pungah* in *Rungpur*.
1587. LOKHENARAIN, son of NORNARAIN.†
1621. BEERNARAIN, son of LOKHENARAIN.
1626. PRANNARAIN, son of BEERNARAIN.
1665. MOHUNARAIN, son of PRANNARAIN, died without issue.
1680. BUSTODEBNARAIN, third brother of the preceding; he was put to death by JUGONARAIN NAZIR DEO, son of GOSSINE MOHEENARAIN NAZIR DEO, on which BHOJE DEO and JUG DEO brought up a force from *Bykuntpur*, put to flight the *Nazir Deo*, and set up MOHINDERNARAIN as rája. He died without issue.
1682. MOHINDERNARAIN, son of MANNARAIN, the son of BISSNONARAIN, second brother of BUSTODEBNARAIN. He dying without issue, *Cooch Behár* was again invaded by BHOJE DEO and JUG DEO, rájás of *Bykuntpur*, but were defeated by SONTONARAIN, then the *Nazir Deo*, a grandson of GOSSINE MOHEENARAIN, brother of rája BEERNARAIN, who set up his first cousin on the throne.
1693. ROOPNARAIN, son of JOGGOTNARAIN, the eldest son of GOSSINE MOHEENARAIN. On his succession *Cooch Behár* appears to have been divided into three shares, between the Rája, the *Nazir Deo*, and the *Nazir Deo's* elder brother, SUTTNARAIN, who was created *Dewan Deo*.
1714. OPEENDERNARAIN, great-great-great grandson of ROOPNARAIN, was set up by KOGHINDERNARAIN, *Nazir Deo*, his great uncle; but DEENNARAIN the son of the *Dewan Deo*, SUTTNARAIN, attempted to seize the throne with the assistance of some Mogul troops; he was, however, defeated, and fled to *Rangpur*.
1763. DEBINDERNARAIN, succeeded his father OPEENDERNARAIN, and died without issue.
1765. DURGINDERNARAIN, son of KURGNARAIN, *Dewan Deo*, brother of OPEENDERNARAIN, succeeded DURJINDERNARAIN, being carried off by the *Bhoteahs*, the *Nazir Deo*, KOGHINDERNARAIN, set up DURJINDERNARAIN's brother, RAJINDERNARAIN.
1769. RAJINDERNARAIN, was succeeded by DURJINDERNARAIN's son.
1771. HURRINDERNARAIN: the year after he ascended the throne, KOGHINDERNARAIN the *Nazir Deo* called in the assistance of the British, with whom he made a treaty in 1772, in consequence of the defeat of the *Bhoteahs* by the British troops under Captain JONES, DUJINDERNARAIN was released and again succeeded to the throne, on his son's death.
1774. DURGINDERNARAIN: he was succeeded by his second son.
1782. HURRINDERNARAIN, the present rája who had seven sons, viz. SEEBINDERNARAIN*, MEGINDERNARAIN†, MOHINDERNARAIN‡, BHOJINDERNARAIN§, POOLINDERNARAIN, JAOGINDERNARAIN, NEEROINDERNARAIN.

* Living.

† Dead. ?

‡ Dead. ?

§ The rája wishes this son to be considered his successor, but he has not been created Joub rája. (*Yuvárája*.)—F. J.

J. F.

II.—*Notice of the Himálayan Vulture Eagle. By Lieut. T. HUTTON.*

In a former notice of this bird, drawn up from the examination of an injured and decaying specimen, I pointed out characters which I thought would entitle it to be ranked as a new and distinct species from that known as the *Gypaëtos Barbatus*, or Bearded Vulture.

I have since that time had opportunities of examining many recently killed specimens in various stages of plumage, from the yearling to the adult bird, and the result of my observations during nearly two years, is to leave me still farther convinced of the correctness of my conjecture as to its distinctness from the Lammer Geyer of the Swiss, and the Bearded Vulture of authors.

Mr. HODGSON, in a paper subsequent to my former notice, describes a Himálayan *Gypaëtos*, and pronounces it to be the European Bird, but I think I shall be able to show that the subject of the present paper possesses two constant characters, which are wanting in the former bird, and which, being constant, I believe to be sufficient to entitle their possessor to rank as a species new to science.

The characters I allude to, are, the dark gorget at the bottom of the neck, across the orange of the under parts, which is *always wanting* in the *G. Barbatus*, or of which at least no mention is made by any author that I have been able to consult* ;—and the relation which the first prime quill bears to the length of the third.

Mr. HODGSON's bird, though stated to the contrary by him, I should conjecture to have been *immature*, as well as under moult; for he describes it as possessing brown feathers about the neck, which in the adult bird is never the case; and moreover he gives the *fourth* quill longest, which character if correct and constant would at once distinguish it, not only from the present subject, but also from the known Bearded Vulture, in both of which the *third* quill is the longest.

Mr. HODGSON asks also, in his postscript, in reference to my description, "Is there not here some undue allowance for shrinking in his old and mutilated specimen?" My answer is, 'On the contrary, I supposed an unskilful hand to have stretched it in skinning, and consequently erring on the safe side, gave $9\frac{1}{2}$ feet of expanse, or *less* than the actual measurement.'

The reason for asking this question, is not however quite apparent, since he has in the same paper allowed it to be probable that the bird may attain an expanse of *eleven* feet, or eighteen inches *more* than mine.

* Brisson: Cuvier: Gardens and Menagerie Zoological Society: Stark's Elements Nat. Hist. Encyclopædia Metropolitana, &c.

I have seen these birds from *Subathu* to the Snowy range; they are by no means of rare occurrence throughout the Hills, and at *Simla* are sometimes even numerous. They may be seen in all stages of plumage, from the dark-colored yearling, to the rich orange hue of the adult. During its flight the dark gorget on the breast of the mature bird is distinctly visible, and is darkest and most conspicuous in the female. Immature birds have the plumage of a dark brownish or blackish colour, varied according to age, with a few buff or dusky orange feathers intermixed; the under parts are also dark and the gorget consequently wanting. In those of the first year, the black bristles leading over the eyes to the hind part of the head are likewise wanting, but in the second and after years, as the plumage advances to maturity, these bristles also appear.

Their flight is strong and swift, and in the habit of sweeping through the air on extended wing, and in the occasional deep bending of the pinions as they renew the force of their advance, they are not unlike the Wandering Albatross (*Diomedea exulæus*), and this resemblance is often much heightened during the rainy season, when the white clouds rolling through the dark valleys of the Hills, give to the scene the appearance of a stormy sea. The *Himálayan Vulture Eagle*, though often seen by two and three at a time, is not gregarious; they feed on offal and carrion and the smaller animals, and like the kite (*Falco cheela*) will carry off portions of flesh in their talons and devour them on the wing. They are wary birds and will not descend to a bait as long as they perceive any person on the watch; they are difficult to bring within range of shot in consequence, and unless the fowler lies concealed he may often watch for days without succeeding in bringing down a specimen. When pressed by hunger, however, which in these regions must sometimes be the case, he becomes much bolder and is more regardless of danger, though still somewhat cautious in his approach to man. If flesh be left exposed unwatched, he does not scruple to take his share, using the utmost despatch and casting a keen glance around as if conscious of the theft and fearful of detection. On alighting, the attitude, and particularly the gait in walking, very strongly resemble those of the "*Neophron percnopterus*," the head and neck being held rather erect and the feet, in walking, lifted high off the ground.

The only sound I have heard them emit, is a hoarse croaking note uttered when angry.

They moult once in the year, during the months of May, June and part of July.

I have occasionally seen them soaring round in company with the

kite and *Neophron percnopterus*, while the *Pondicherry* and Indian Vultures (*V. ponticerianus* and *V. Indicus*) were feasting on a carcass in the depth of the glen below.

They select some retired and nearly inaccessible cliff or ledge of rock whenever they seek to build their nests, which they commence in April, and the young are ready to take wing about the end of June.

On a comparison of Nos. 1 and 3, with the description of the mutilated bird formerly given by me it will be seen that the relative length of the primary quills is as near as possible the same in all, speaking not only to the accuracy of my measurements of the decaying specimen, but affording a strong additional reason for separating the *Himálayan* from the European *Gypaetos*, in which the first quill is represented as *nearly equal* to the *second* and *third*, while in the present species the third quill, in adult birds, uniformly exceeds the first, at the least, by three inches and a half.

Thus my own conviction is, that the relative length of the primary quills, together with the black gorget on the lower part of the neck, furnish *two constant* characters, uniformly foreign to the Bearded Vulture of authors, and I have therefore ventured to offer it as a species new to science, under the title of

GYPÆTOS HEMACHALANUS.

G. suprâ fusco-niger, subtùs ferrugineus; collo obscurior, infrâ pallidior; collo inferiore nigro circumcincto; primoribus, reetricibusque cinereis, marginibus nigrexentibus; remige tertio cæteris longiore, $3\frac{1}{2}$ poll. primum excedente. In cæteris G. Barbato similis.

The following are correct measurements and descriptions of birds of various ages.

No. 1. Adult in full plumage.

	Ft. in.
Length from tip of bill to end of tail,	... 4 0
Breadth of expanded wings,	... 8 6
Length of the bill from tip to gape,	... 0 4
Basal height,	... 0 $1\frac{1}{2}$
Basal breadth at the gape,	... 0 $2\frac{1}{2}$
Point of bill falling below the under mandible,	... 0 $0\frac{1}{2}$
Tail of 12 feathers, forming a wedge.	
The two central feathers of which are in length,	... 1 7
The first from the centre is $0\frac{3}{4}$ in. less or	... 1 $6\frac{1}{4}$
The second „ „ 1 in. less or	... 1 $5\frac{1}{4}$
„ third „ „ $1\frac{1}{2}$ ins. less or	... 1 $3\frac{3}{4}$
„ fourth „ „ $1\frac{1}{2}$ ins. less or	... 1 $2\frac{1}{4}$
„ fifth or outermost „ $2\frac{1}{4}$ ins. less or	... 1 0

The outer feather is therefore 7 inches shorter than the central one. The first quill of the wings is $3\frac{2}{10}$ inches less than the 2nd.
 „ second „ „ $0\frac{3}{10}$ inch less than the 3rd.
 „ third „ „ 1 inch longer than the 4th.
 The third quill is therefore the longest, and exceeds the first by $3\frac{1}{2}$ inches.

Head clothed with short and somewhat down-like whitish feathers, with a black line of strong hairs arising from the base of the upper mandible running over each eye, and turning round to the back part of the head, but not joining. A short black stripe or moustache running backwards from the gape, covering the ears, which are on a line with the mouth. Nostrils and cere concealed beneath strong black bristles, directed forwards. Chin with a bunch of black bristles hanging down like a beard; from thence, the throat, neck, breast, belly, vent and thighs are ferruginous or pale orange, darkest on the chin and throat, palest on the vent and thighs; upper half of the back part of the neck, buff or very pale orange; lower half of the same, deep black, as also the back and rump, each feather with a narrow white shaft: upper smaller wing coverts black, with a buff or ferruginous stripe down the shaft, ending in a somewhat triangular spot of the same color; under wing coverts the same. From the black on the hind part of the neck, across the orange feathers of the breast, runs a band of deep brown or black, forming a well marked collar or gorget. Large wing coverts above, all the quills of the wings and tail, ashy black with darker edges, the shafts white. Tail of twelve feathers and wedged. Bill horn-colored; legs clothed to the toes with pale ferruginous feathers; toes bluish lead color; claws black, strong and curved. Under side of the wings pale cinereous, the ends of the quills blackish.

This bird was shot at *Tootoo* in September 1836, about 5 marches from *Simla*, and was in full plumage, the moult taking place in May and June.

This description will be found generally applicable to all adult birds, with the exception of the length and breadth, in which there is great variety.

No. 2. Adult and moulting; plumage in all respects agreeing with the last.

	Ft.	in.
Length from tip of bill to end of tail,	...	3 7
Expanse of wings,	...	8 6
Length of bill,	...	0 4
Basal height,	...	0 2
Basal breadth,	...	0 $2\frac{3}{4}$
Point falling below the under mandible,	...	0 $0\frac{1}{2}$
The third quill of the wings longest,		

Shot at *Simla*, 16th May 1837, while devouring some raw flesh laid out as a bait.

Had the plumage been perfect, it would have exceeded the last in size.

No. 3. Young of the first year, in moult.

Length, 3 ft. 9 in. Breadth, ft. 8 9 in.
 The first quill $3\frac{1}{2}$ inches less than the second.
 ,, second ,, $0\frac{1}{2}$ inch less than the third.
 ,, third ,, $0\frac{1}{2}$ inch longer than the fourth.
 The 3rd quill longest.

The relative length of the quills agrees closely with the foregoing birds, something being allowed for moulting. Plumage above dark brown, clouded with black, with a few buff or pale brown feathers on the upper part of the back. Head black, as also the upper part of the neck. Line of bristles over the eyes *wanting*. Strong over the cere and on the beard. Chin, throat and neck beneath, sooty black, from thence to the vent, dusky or pale brown. Under wing coverts dusky.

Shot at *Simla*, July 1837.

No. 4. Young of the 2nd or 3rd year, in moult.

	Ft.	in.
Length, 8 ft. 9 in. Breadth, 8 ft. 4 in.		
Length of bill,	...	0 $3\frac{3}{4}$
Basal height,	...	0 2
Basal breadth,	...	0 $2\frac{3}{4}$
Point falling,	...	0 $0\frac{1}{2}$
The 3rd quill longest.		

Beneath, from the beard to the breast, dark brown intermixed with tawny and orange-colored feathers; breast, belly, vent, thighs and under tail coverts, dirty orange clouded with a brownish tinge. Under wing coverts brown with clutches of black. Upper parts varied with a mixture of dark brown and tawny feathers, darkest on the rump. Upper wing coverts brown with dusky patches. Quills of the tail and wings dusky brown or ashy black, the shafts white. Feet leaden blue, claws blackish horn color. The line of bristles over the eyes is well marked in this specimen. The upper wing coverts, &c., want the buff-colored shaft and triangular spot at the tips, so conspicuous in the adult bird.

This specimen had no band or gorget on the lower part of the neck as in the mature bird, and is I believe in the second year's plumage, when the orange of the upper and under parts of the neck is beginning to usurp the place of the dark brown feathers of the first year.

Shot at *Simla*, 20th May 1837.

The measurements of three other adult Birds, shot at *Simla*, were as follows :

	<i>ft. in.</i>		<i>ft. in.</i>
Adult male, Length,	... 4 0	Breadth,	... 9 0
Adult female,	... 4 1½		... 9 0
Adult female,	... 0 0		... 9 8½

All had the gorget, and it was darkest in the females; in other respects all agreed with No. 1, above described.

The *Neemuch* specimen was in length 3 feet 11 inches, and in breadth 9 feet 6 inches.

The following table will serve to show how much they vary in dimensions.

	<i>ft. in.</i>		<i>ft. in.</i>
1. Adult male in full plumage, Length,...	4 0	Breadth,...	8 6
Adult male,	... 4 0		... 9 0
Adult female,	... 4 1½		... 9 0
Adult female,	... 0 0		... 9 8½
5. <i>Neemuch</i> bird adult,	... 3 11		... 9 6
Adult bird moulting,	.. 3 7		... 8 6
Young bird 1st year? moulting,	... 3 9		.. 8 9
8. Young bird 2nd or 3rd year? moulting, ..	3 9		... 8 4

Now allowing the two females to be of the same length, we shall have an average on the five adult birds in full plumage, of length rather less than four feet and half an inch, and breadth rather more than nine feet one and half inch.

POSTSCRIPT.—I formerly noticed the presence of a dark line along the head; this is erroneous, and was merely occasioned by the loss of the occipital feathers in the old specimen, leaving a few stumps and blackish hairs.

III.—Account of *Kálá Bágħ* on the right bank of the *Indus*. By *Munshí MOHAN LA'L*.

During our voyage on the *Indus* we saw no place on its banks worthy of notice except *Rorí* and *Kálá Bágħ*. The former presented nothing new which would enter my head in addition to the account read in the work of Captain BURNES, but the latter though in some respect already laid before the public by Mr. ELPHINSTONE, still enchanted me with its appearance.

The view of *Kálá Bágħ* or *Bághán* from the valley which pours out the *Indus* is oval; and from the opposite bank it gives a most striking scenery which I cannot describe in any language. The houses of *Kálá Bágħ* are built of stones and mud on the very bank of the river. The *Bázár* is so narrow, that two men can hardly pass abreast through it,

and the roofs of the houses are so low that a person cannot ride through it on horseback. There are about 140 shops which are all shut by the fall of the evening, and darkness covers the face of the streets.

MALAK ALÁYÁR is the ruler of *Bághán*; he is descended from the *Awán* family. He collects 32,000 Rs. per year, out of which he pays 10,000 Rs. to RANJIT SINGH. He has about 200 horsemen and the same number of foot soldiers.

There are 10 alum manufactories at *Bághín* and 200 at *Moch* on the other side of the river. Each of them consumes 4 Rs. fuel every day, which is cut and brought from *Kachhi*. A kind of earth which is greenish inside is dug from the neighbouring "rah" or hillocks: it is called "rol" and is put between layers of burning wood. Sprinkling of water produces an immediate fire, and then it becomes red. After this it is boiled in iron pans which are 52 spans in diameter, and passes into many successive focuses, (filters?) where it is well cleaned. *Jasáhu*, which is a kind of saltpetre, and produced in *Kachhi*, is mixed with it; and by means of large cups it is poured into the earthen jars. For some days it is left among them where it turns into the large loaves of alum. Each of the loaves is 2 mans in weight, and the price of each load, which is 8 mans, is 2 Rs.

The salt range stands close by the town, but the mines which were lately worked, and numbered 21, are on the other side of the mountain. It shines like crystal on the face of the hills. The appearance of the salt rock is very curious; in some places it is as a sheet of snow and in other lies in the manner of a line of shining marble running through and across the mountain. The grazing of the cattle has caused many holes in the base of the range. The caves from whence the salt is excavated are neither open nor deep. In the preceding times there was dug about 300,000 Rs. worth per year. The half of that quantity was the share of the diggers, the third of the *malak* or headman, and the fourth of the Maharája. It was sold from 6 to 7 mans per Rupee and sent to *Derahját* by the Indus. Since the mines of *Pind Dáden Khán* have been monopolized by rája GOLA'B SINGH, all the salt ranges under the authority of RANJIT SINGH have fallen into his possession. He digs the mines and sells the salt according to his pleasure and on unjust plans. The salt of *Kohát* is not so good as that of *Kalá Bágh*. *Sawád* and *Bhúner* formerly received it from this place.

The earth of *Bághín* produces alum as well as rock salt and sulphur. The *Sikh* authorities are not aware of the existence of the last mine, but the *malak* who descends from the ruling family of this place knows it, and digs it to manufacture gunpowder when he wants.

The heat in summer is excessive and the natives pass the hot noons in the cold caves of the salt. Their lodgings which are poor cottages run along the base or slope of the range. The complexion of the people is pale and fever generally attacks them. Nearly half of the population is subject to goitre.

The Hindu ladies who follow the doctrine of Bábá NA'NAK and GURU' GOVIND SINGH, tie their hair on the top of the head, in a manner hardly different from the fashion adopted by the European ladies, but that combs are not used by them.

IV.—*A brief account of the Origin of the Dáúd Putras, and of the power and birth of BAHÁWAL KHA'N their Chief, on the bank of the Ghárá and Indus. By the same.*

I had long since intended to lay before you the account of the birth and power of MUHAMMAD BAHÁWAL KHA'N, the present chief of the *Dáúd Putras*, but it struck me that the authorities who have frequently navigated the *Ghára* might not have omitted to mention them. By the late arrival of the Asiatic Journal for the month of March, which contains the "Journal of Captain C. M. WADE'S voyage from *Lodiuna* to *Mithankot* by the river *Satlaj* on his mission to *Láhor* and *Baháwalpur* in 1832-33 by Lieutenant MACKESON, 14th Regiment, N. I." I find that the latter officer has only described the country, buildings, gardens and people, &c. of *Baháwalpur*, and has not favored us with any biographical accounts of the *Dáúd Putras*, which I have collected from authentic sources. I do not presume to say that it will meet your approbation, but trust that it will not fail to give you some amusement and information.

DA'U'D was a person of obscure origin and a weaver at *Shikárpur*; he was in the habit of shooting in the suburbs. One day finding no game he was returning home with great disappointment; perchance he happened to come on the brim of a ford or pond and listened to the sound as if some animal were passing through the water. It was night-time and he was sure that it could be no man, but some quadruped. As he had a loaded gun in his hands and could see the moving of the water he fired at it, which instantly created a cheerless shout saying, "You have killed an innocent being. I was a man and not an animal, take care of my wife and little children as they have now nobody to support them*."

* This story resembles that of the death of YAJNADATTA killed by king DASARATHA, the subject of a beautiful episode in the *Ramáyana*, translated by the late M. CHEZY; and perhaps the *poetry* of it may be partly borrowed thence:—

DA'U'D went near his head and while he was yet breathing learnt where his family was. On his death he cut off one of his fingers and took it to his house. He saw that a female with two young sons sat alone, and on his approach she began to frighten him. He said to her, do not make foolish attempts, I have just killed your husband, and threw the finger as a mark before her. She delivered herself to DA'U'D and implored his mercy not to kill her sons. He consoled them and asked what was the name of her late husband, and what names had her sons. She replied that the name of her husband was "KEHRU'," and those of his two sons "KAHÍR" (rope), and "KANDA" (thorn), and his forefathers were sweepers. As the lady was young and had an enchanting complexion, DA'U'D brought her along with her sons to his house. All the property which KEHRU' had hoarded by robbery fell into the hands of DA'U'D, who being a bachelor married her without delay. He changed the names of her sons from "KAHÍR" to "KEHUR" and from "KANDA" to "URB."

Sometime having elapsed she brought forth the third son by DA'U'D, who was named "BIRAJ." These three boys on reaching their manhood became fathers of a large family. The descendants of "BIRAJ" are called *Birjaní* to this day; and those from "KEHUR" *Kehraní*. The sons of "URB" are noted as *Irbaní*. As the *Birjanís* are descended from DA'U'D himself, they marry the daughters of the sons of the other two, but never give them their own, because they look upon *Kehraní* and *Irbaní* as the lowest of the tribe.

In a short time they grew much in power and number and built a separate fort to live in, in the suburbs of *Shikárpur*. Many of these

18. "Nipáne mahisham rátrao gajamvá tīram áyatam,
anyamvápi mṛigam kanchij jighánsur ajitendriyas.
19. atháham pūryamánasya jalakumbhasya niswanam,
achakshurvishaye sraosham váraṇasyeva vr̥ṇhitam.
20. Tutas supunkham nisitam saram sandháya kármuke
asmin sabde saram kshipram asr̥janam daivamohitas;
21. Sharechásr̥ṇavam tasmin mukte nipátite tadá
Há ṇatosmīti karuṇám mánuṣheneritám giram†!"

which is thus literally rendered in Latin by the translator :

18. "Dum biberet, urum, noctu, elephantumve ad ripam advenientem
aliamve etiam feram quamlibet interficiendi cupidus, animi impotens.
19. Tum ego amphoræ quæ implebatur sonitum,
videndi sensu destitutus, audivi elephantum velut fremitum.
20. Tum bene-pennatum, acutam, sagittam aptans in arcu,
ad hunc sonitum sagittam statim emisi, fato delusus;
21. Sagittaque, audivi, hac emissa, postquam cecidit,
'Ah! occisus sum' ecce miserabilem hominis tremulam vocem.

† The versification of this beautiful episode is the same as has been made familiar to us by copious Páli extracts from the *Mahávansa*. The English reader will best fall into it by repeating it to the vulgar tune of "A captain bold in Halifax."—ED.

people engaged themselves in cultivation, catching fishes, and many became plunderers, notwithstanding the rulers of the country threatened them for bad conduct; but they never lent them their ears.

The *Dáúd Putras* descended from the abovementioned three principal branches; and, as the number grew, were subdivided into the different clans under the name of some respectable person of the family. Such is the origin of the *Dáúd Putra* race.

On the death of AURANGZEB, A. H. 1118, BAHÁ'DUR SHA'H held the sceptre of the realm of Hindustán, and was every day informed that the *Afgháns* under JE'WAN KHA'N were destroying the country of *Sewí* and *Dhádár* near *Qandhár*. He was proud of the services which he had performed for AURANGZEB against DARA' SHIKOH. When the latter prince passed through *Sewí* on his way to *Qandhár*, he presented JEWAN KHA'N with riches, and trusting his confidence put up in his house. The KHA'N being treacherous and forgetful of the liberal obligations which he had received from the young prince, imprisoned and conducted him to the presence of the king at *Delhí*. His majesty honored him with the title of BAKHTYA'R KHA'N as well as with rich dresses*.

BAKHTYA'R KHA'N having obtained the leave of the king to return to his native land, considered himself independent of the rulers of *Qandhár* and *Shikárpur*. He after said publicly that he imprisoned DARA' SHIKOH and planted AURANGZEB on the throne; but while the king lived he was afraid to rebel or to espouse predatory habits.

When AURANGZEB expired, BAKHTYA'R KHA'N became mutinous and lengthened his hands to plunder the travellers. BAHÁ'DUR SHA'H was highly incensed at this, and appointed his son the prince MOIZZUDDÍN with an experienced army to chastise that banditti. The prince came to *Sewí* by the way of *Multún*, and after great opposition he killed BAKHTYA'R KHA'N and also the other *Afgháns* of his tribe.

In this battle the *Dáúd Putras* gave great assistance to the prince or the son of BAHÁ'DUR SHA'H, and showed wonderful actions of bravery. They obtained a good deal of booty from the camp of the *Bakhtyáris*, but were in want of a good leader, and the means to draw the favorable notice of the prince and his nobles. Being pressed, they commenced pillaging the rear of the troops, and by that plan were summoned to the prince.

MOIZZUDDÍN asked the *Dáúd Putras* the cause of their ill behaviour, to which their head men, as SA'DAQ KHA'N BIRJA'NÍ, MENDU' KHA'N, ISLA'M KHA'N and MUHAMMAD MARÚ'B KEHRA'NÍ, and QA'YAM KHA'N IRBANÍ unanimously replied, that they without salary sided with the

* This account is particularly mentioned in the *Sháh Jahán Námah* and *Aurangzêbe Námah*.

prince and fought against the *Bakhtyáris*, but received no reward in return. They also complained against the injustice of the prince in rewarding those who performed no heroism in the engagement, and forgetting the men who put their lives in danger.

On hearing this the prince ordered them to occupy the country and desert lying on the eastern banks of the *Indus* and *Ghárá* opposite to *Shikárpur* and *Multan*, and to protect them from robbers.

According to the rules of the prince, the *Dáúd Putras* paid half of the produce of the land to government and kept half for themselves. This was the first time that the *Dáúd Putras* crossed the *Indus*. The town which they first peopled in *Kachhí* was *Khán Belí*, and the whole tribe distributed the land among themselves which to this day bears the name of the respective individuals. After this they became rich, and masters of the country between *Sabzalkot* and *Kot Quzan Rais*. They also erected the forts in the sandy desert and named them as *Islám Garh*, *Mauj Garh*, *Dín Garh* and *Khán Garh*, &c. &c. They are about 25 in number, situated at the distance of 15 or 16 kos from each other, and extend to *Valhor* and *Bhalan* the boundary of *Bikáner*.

On the bank of the *Ghárá* the *Dáúd Putras* built *Ahmedpur*, *Nanshaira*, *Sultánpur*, and *Khánpur*, and inhabited the country on the east and west of the same river from *Pák Pattan* down to *Uch*. They obtained the sanction of the *Multán* government, dug many wells, mahás (canals), and also got the possession of the country of *Kachhí* from *Sháh Garh* to *Mithankot*, which lie between the eastern bank of the *Indus* and the western of *Cheráh* and *Panjnad*. In the two latter countries they peopled many villages which bore their names. When they grew powerful they began to commit faults and oppression, for they had no ruler and never obeyed each other. Finally they became tyrants and universally took to pillaging the pilgrims and merchants.

In the beginning of A. H. 1153 or when NA'DIR SHA'H returned to *Kábul* from the victory of *Delhí*, he was obliged to come down to *Derahját* and bend his course towards *Shikárpur* and *Larkána*, where he crossed the *Indus*, to reduce KHUDA'YA'R or MIA'N NUR MUHAMMAD KALOHNNA' of *Umankot* to subjection. When he settled the affairs of that quarter, he heard many complaints against the *Dáúd Putras*, on which he appointed Sardár TAHHASP QULI' KHAN to punish that nation. Before the *Tamách Quli*, as these people call him, reached their country, they assembled, put many of their wives to the sword, and taking their children went into the sandy desert where they made a wall round a small pond to defend themselves. The Sardár at the head of a considerable army besieged the *Dáúd Putras*. An engagement ensued and the

Persian commander was shot by the enemy: though some say by his own horsemen. On his death the army dispersed, lost the road and expired in want of the water, which the *Dáúd Putras* had in their charge. If the water had been in the hands of the Persians, they would have procured a decided victory.

The intelligence of the death of TAIHMA'SP QULÍ KHA'N and his unsuccessful expedition was conveyed to NA'DIR SHA'H at *Mathoud*, who resolved to revenge his losses after pressing the disturbances of that quarter, which continued to the end of his life.

When the Prince MOÍZZUDDÍN had given the *Dáúd Putras* the country on the left bank of the *Ghárá*, the fort of *Diláwar* in the desert was under the government of the rája of *Bikáner*. MÍR MÓMIN KHA'N and DÍWA'N JASPAT RA'É the agents of NAWA'B KHA'N Bahádur, son of ABUL SAMÍ KHÁN TAÍMURÍ, the governor of *Lahor* and *Multán*, drove out the garrison of the rája and made the *Dáúd Putras* masters of that stronghold. They said, by placing the *Dáúd Putras* in *Diláwar* they had fixed an iron pin on their boundary to check the progress of their antagonists.

Previous to the settling of the *Dáúd Putras* in *Diláwar*, the *Rájpúts* from the *Bikáner* and *Jaisalmer* countries harassed all the towns of *Multán* on the *Ghárá*, and since that time, none of the *Rájpúts* dared to cross the sandy desert.

The country of *Lakhi** lies 25 kos S. W. of the eastern bank of the *Panjnád* and the *Indus*. From thence passing through *Diláwar* the distance from *Mauj Garh* and *Dinpur* to *Valhar* and *Bhalar* is estimated at about 100 kos. Each of the abovementioned forts are situated 25 kos from the eastern bank of the *Ghárá*.

The first individual of the *Dáúd Putras* tribe of the *Birjání* family who came into this country was SADAQ KHÁN. He had a son named BAHÁ'WAL KHA'N who built the city of *Baháwalpur*. The latter again had two sons namely MUBA'RAK KHA'N and FATAH KHA'N. The former was generous, popular, and added some structures to make the city large. He gained the title of *Alí Muhammad Khan Khúgwarí* the ruler of *Multán*; he also dug a canal, which is since called *Sardár whár*, from the *Ghárá*, and peopled the ruinous districts of *Jalápur*, *Kattá*, *Ghalwhár* and *Adamwhár*. He paid the share of the *Multán* government without fail, and improved the country of *Kachhí* greatly—in fact peopled it newly. The latter was pious and never took notice of the affairs of the world.

* *Lakhi* means a tableland having on both sides small cliffs of sand.

MUBÁRAK KHÁN died without issue ; and was succeeded by JA'FAR KHÁN the son of his brother FATAH KHÁN. The successor was called by the name of BAHÁWAL KHÁN. On the third day of his death all the respectable *Dáúd Putras* and the *Sayads* of *Uch* assembled to console JA'FAR KHÁN for the loss of his uncle, and to pray for the salvation of the deceased. Among them were the Makhdúm NÁSIRUDDÍ'N, SAYAD BOKHÁRÍ and Makhdúm GANJ GÍLARÍ, who stood and turning to JÁN MUHAMMAD and NUR MUHAMMAD KHÁN of the *Kehrání* family, and KA'RA'M and JAWÁL KHÁN of the *Irbáni* house, said in the following manner : " MUBÁRAK KHÁN gave a good name to the *Dáúd Putras* and treated every person kindly ; you have no ruler among yourselves while every nation in the world has. If you take our sincere advice, look unanimously upon JA'FAR KHÁN as your leader and name him BAHÁWAL KHAN." At length after a long discussion all the *Dáúd Putras* gave a full consent to the proposal of the Makhdúms ; called JA'FAR by the name of BAHÁWAL KHÁN, and paid him homage. IKHIT-YA'R KHÁN *Kehrání* boldly said to the Makhdúms that the " influence and power which they are placing in the person of BAHÁWAL KHÁN first will destroy their own houses and then those of the whole *Dáúd Putras*." The word of this man proved afterwards exactly true.

When the above mentioned Makhdúms died, BAHÁWAL KHÁN planted the seeds of quarrel amongst their sons, finally levelled their castles to the ground, and confiscated all their property. He made such schemes as created many disorders between the *Dáúd Putras*. This presented a favorable opportunity to BAHÁWAL KHÁN to reduce every one of them to poverty, and deprive them of the power and privileges which they enjoyed.

BAHÁWAL KHÁN on killing KHUDA' BAKHSH KHÁN *Kerahní*, who was in possession of great authority in the nation, said before he expired, that he put all the rebellious *Dáúd Putras* to death and established such peace in the country that a female could govern it without thinking of any insurrection on the part of the population.

The *Dáúd Putras* had recourse to the late TAIMUR SHA'H, the king of *Kábul*, and told his majesty that his coming to their country and assisting them against BAHÁWAL KHÁN would enrich him abundantly. In 1203 A. H. TAIMUR SHA'H came to *Baháwalpur* with 70,000 horsemen, and the KHÁN was pressed to have shelter into the sandy desert. The king driving the KHÁN'S garrison out of the fort of *Diláwar*, and keeping all the *Dáúd Putras* under SHÁH MUHAMMAD KHÁN BÁDOZÁI, appointed him the governor of that place.

When TAIMUR SHA'H returned, BAHÁWAL KHÁN by his deep policy got

friends again with the *Dáúd Putras*, and by their aid expelled the king's governor out of the country, and made himself master as before. BAHÁ'WAL KHA'N died a natural death in 1224 A. H. after having governed for 36 years. His son SA'DAQ KHA'N succeeded him and ruled the *Dáúd Putras* for 16 years. This personage received the Honorable M. ELPHINSTONE'S Mission in its way to *Kábul* with great consideration, and showed him every hospitality and favor, as asserted in that gentleman's work.

It is nearly 13 years since SA'DAQ KHA'N died and his son, the present chief MUHAMMAD BAHÁ'WAL KHÁN, killed and imprisoned all his uncles and brothers and made himself the owner of the country. In the beginning he was smitten with pleasures and took very little notice of public affairs. The lion of the *Panjáb* embraced a favorable opportunity and deprived the weak KHÁN of his hereditary rights, which his enterprising ancestors had in the countries of *Multán* and *Kachhí*. The land which he holds now yields him six lacs of rupees per year, and all his treasures, which amount to five millions, are deposited in the fort of *Diláwar*. He has a despotic character and is addicted to every kind of luxury. He does not neglect all sorts of assistance to the British authorities for the navigation of the *Indus*, and is the first and best of our allies on that river. He is very fond of hunting, the accounts of which he keeps and compares with those of his father, to know whether he or his ancestors killed most game.

While I was acting in the place of Lieut. F. MACKESON the British Agent on the *Indus*, BAHÁ'WAL KHÁN treated me very kindly and showed me every consideration and respect. He deserves both my public and private thanks for the favors he has done me during my sojourn in his country,

IV.—Facsimiles of Ancient Inscriptions, Continued.

Notice of antiquities discovered in the eastern division of Gorakhpur; with a copy of an inscription on a stone pillar, &c. By D. LISTON, Esq.

I have the pleasure of sending you a copy of an inscription on a pillar which stands close by the village of *Kuhaon* in tuppah *Myle*, pergunnah *Selampoor Mujomlee*, zillah *Gorakhpur*. The copy I believe to be tolerably correct; it was first transcribed by a friend and myself on the spot; a clean copy of it was then made at leisure, taken back and compared letter by letter with the original.

The people of the village had no tradition to offer regarding the erection of the column, but it was generally agreed by them and others that no one who had made the attempt had been able to decipher the character, though it had occasionally been visited by natives of learning who had essayed the task.

The pillar is of a very compact sandstone and the letters deeply and clearly carved. Should it be my lot to return to the purgannah, I shall be most happy, if you intimate that the inscription contains matter of importance, to endeavour to take an accurate impression of it, so that it may be submitted to the examination of those who have studied the characters of such inscriptions, exactly as it appears on the column.

The base of the pillar to the height of four and a half feet is a square of one foot ten inches. At 4-6 it is wrought into an octagonal form, and it is on the three northern faces of this portion of the column that the inscription is found. The accompanying sketch which I have attempted will serve to give an idea of the appearance of the column. The base portion on the western side has a naked male figure in relief carved on it, two females kneel at his feet and behind him is a snake coiled, gifted with seven heads which form a sort of canopy over the hero or god. On each aspect of the square portion of the column at the upper end is also a figure in relief, and the whole is topped by a metal spike, on which most probably was fixed a lion or *Singh*, but that has disappeared; not a fragment even remaining as evidence of its former existence.

II. At *Bhágálpur* in tuppah *Bulleah*, the next to that of *Myle* to the east, and five miles S. E. of *Kuhaon*, is another pillar with traces of an inscription consisting of twenty-one lines; some pains, however, have been taken to destroy the engraving, and I fear that any attempt to read it now must prove vain. I enclose as correct a copy as I could take of the two first lines, together with a heading which I suspect to be newer than the rest. What I now transmit is the most distinct portion of the inscription; perhaps an impression of what remains of the letters might be got, and if you think that there would be any advantage in attaining this object I shall endeavour to have it effected. This pillar is entirely round and is smaller than that at *Kuhaon*, but of the same description of material; viz. hard compact sandstone; it is 17 or 18 feet in height and about 20 inches in diameter; nothing beyond the shaft remains standing; but a portion of a capital lies near, and a *bairárgi* who occupies a hut close by reported, that five years ago a storm upset a trisula and *singh* from the column, and that the fragments of the ruins had been stolen by travellers. The *bairárgi*'s information was not

confirmed to the full extent by replies to questions put to other men who had known the column from a period long anterior to that assigned to the destructive tempest.

An attempt has been made to cut this column into two pieces at the elevation at which the inscription occurs ; the perpetrators of the mischief, however, have begun their work in a quarter in which there are no letters : the writing is on the eastern aspect, the cutting has been commenced on the west side. The greater dilapidation of this column compared with that at *Kuhaon* may perhaps be accounted for by *Bhágálpur* being a public ferry on the *Gogra* river, and by such an object consequently being more obnoxious to injury from the rude hands of bigotted strangers here than at the other more retired locality.

The bairági stated that the pillar had been created in honour of five brothers, and pretended to read the first two lines thus in Sanskrit as he alleged, though the last words are plain Hindui.

Bheem Lukoa Aujién Sahdeo Deodustul sadée punchma.....Sowa Lakh roopeea khurj luga hy.....

The five Bheems whose names are here given our cicerone told us had come from *Delhi* and conquered *Nipal*. He mentioned the *Bettiah Lat* as connected with this and the one at *Kuhaon*, but he said there were no other in the *Gorakhpur* district, and this assertion is confirmed by answers to inquiries made of other intelligent natives who know the district well.

III. At *Serga* a village in pergunnah *Sidowa Jobena*, about three miles north of *Samour* (a stage on the road from *Chupra* to *Gorakhpur*, and where the traveller first enters zillah *Gorakhpur*) are some stone images nearly the size of life ; they have been disfigured in a similar manner to that of *Mata Konr* at *Kusseea* of which I sent a notice to the *Journal* some months ago, though a representation of a group of dancers of small proportions has escaped nearly untouched.

The most remarkable of the idols is one of *Bhowanee* or *Durga*. This has been sadly mutilated ; what formed the nose has, I suppose, been originally let into the stone out of which the image is cut, and this has been removed, giving the figure the appearance of a person in an advanced stage of a loathsome disease. Little respect is paid to this statue, owing it may be to this revolting appearance ; the brahman of the neighbouring village is, however, called on occasionally to officiate at the shrine when a rare votary makes his or her appearance.

The figure which is rather well carved is that of a young girl who has hardly arrived at puberty. There are or have been eight arms some of which have been removed, but it is not said that the goddess has had

the power or inclination to protect or avenge herself as *Mata Konr* is said to have done. This image is alone. About half a mile to the west there is another of a different divinity of ruder workmanship and deeply sunk in the ground. It is here that the group of dancers above mentioned is met with on a separate slab of very heavy stone.

All these objects have ceased to attract much respect or even to excite much interest, and seem the remains of a people or of a religion that has passed away. Though taking a somewhat lively interest in remains of this sort, it has been by accident that those of which I have given this notice have come under my observation. I had been encamped at *Bhúgalpur* several times, and for days together before I heard of the pillar at that village, and, in consequence, of the more entire one at *Kuhaon*. It is not indeed easily found, being situated in a small mango tope and close by one of the trees. That at *Kuhaon* stands isolated and is a conspicuous object to the passing traveller from every side.

—

Note on the above inscriptions from Gorakhpur, by J. P.

The mutilated fragment of the inscription on the column at *Bhúgalpur*, is of a comparatively modern date, being in the *Kutilla* character: the two lines given as a specimen in Pl. I. are surmounted by the words राज जोगी *rāja jogī*, in a still more recent character as suspected by Mr. LISTON: and nothing of the five Pándavas or of the expenditure of 1½ lakhs so impudently asserted by the *bairági* is to be found there. Mr. L. has since forwarded us a printed impression of the whole, but it is quite illegible.

The *Kuhaon* inscription is however of a much more interesting character. Perceiving from the copy which accompanied the above note, that it was in the *Chandra Gupta* (or for shortness sake the *Gupta*) alphabet, I requested the author to take off an impression from the stone itself, which he has since done with entire success, acknowledging that with all the care he had taken in his former copy there were discrepancies and redundancies which he could have believed impossible.

The facsimile is introduced on a reduced scale into Plate I. It is in excellent preservation, and the versification, in the *Srigdhara* measure complete throughout. At the head of the second and third lines only there are a couple of superfluous letters introduced, in the former सि and in the latter ङ: which I presume should be read together as सिङ्ग *siddha*, 'accomplished'—or it may be the name of the sculptor. After transcription, my pandit KAMALA' KANTA readily furnished me with the interpretation of this curious monument, which I accordingly annex in modern Devanágari and translation:

Transcript in Modern Devanāgarī.

यस्योपस्थानभूमि ऋषतिशतशिरःपातवातावधूता
गुप्तानां वन्शजस्य प्रविष्टतयशसस्तस्य सर्वोत्तमर्द्धः
राज्ये शक्रोपमस्य क्षितिपशतपतेः खान्दगुप्तस्य शान्तेः
वर्धे त्रिंशदृशैकोत्तरकशततमे ज्यैष्ठमासि प्रपन्ने
ख्यातेस्मिन्ग्रामरत्ने ककुभः रति जनैस्साधुसंसर्गपूते
पुत्रो यस्सो मिलस्य प्रचुर गण निधे र्भट्टि सोमो महार्थः
तत्सुनूरुद्रसोमः प्रथुलमति यशा व्याघ्रःरत्यन्यसञ्ज्ञो
मद्रस्तस्यात्मजो भूद्विजगुरुयतिषु प्रायशः प्रीतिमान्यः
पुण्य खान्धं स चक्रे जगदिदमखिलं संसरद्दीव्य भीतो
श्रेयोत्यं भूतभूत्यै पथि नियमवतामर्हतामादिकर्तृण्
पद्मेन्द्रां स्थापयित्वा धरणि धरमयान्सन्निखातस्ततोयाण्
शैलस्तम्भः सुचारुगिरिबरशिखराग्रोपमः कीर्ति कर्त्ता *

* The following errors of orthography are noted by the pandit: applying न before श and ग in the second fourth lines. The insertion of *visarga* in ककुभःरति and व्याघ्रःरति भोतो for भीतो in the ninth-line: the ण final of the tenth and eleventh lines, which should both be नः and खान्त सन्तोयां in the 10th which should be खान्तस्यतोयां.

Translation.

“ In the month of *Jyais̥tha*, in the year one hundred and thirty-three† after the decease‡ of SKANDA GUPTA, the chief of a hundred kings, resembling INDRA in his rule, possessed of the chiefest of riches, enjoying far-spread reputation, born of the royal race of the GUPTAS, whose earthly throne was shaken by the wind of the bowing heads of a hundred kings.

At this celebrated and precious village, sanctified in reverential attachment by the inhabitants of *Kakubharati*§.

The opulent BHATTI SOMA was the son of AMILA, the receptacle of good qualities. His son was the very famous and talented RUDRA

† Lit. “ The month *Jyestha* in the year thirty and two and one plus one hundred, being arrived.”

‡ *Shantéh*, of the repose, i. e. death.

§ Written *Kakubhahrati* ककुभः रतिजनैस (sic): the meaning must be that such was the name of the village; and probably the modern *Kuhaon* may be a corruption of the ancient appellation *kakubha*.

SOMA, known by another appellation as VYAGHRARATI*. His own son was MADRA, the constant and friendly patron of *brahmans*, *gurus*, and *yatis*. He, struck with awe at beholding the universal instability of this world, made (for himself) a road of virtue†; having set up (established) along the roadside, five images, made of quarried stone, of INDRA, objects of adoration to the religious and devout, for the increase of his own moral merit and the happiness of mankind; (the same) having attached thereto a tank filled with water.

This stone pillar, beautiful and lofty as the craggy pinnacles of the mountains, is the maker of renown: (i. e. records his meritorious act.)"

The circumstance of chief importance in the above monument, is its allusion to 'SKANDA GUPTA, of the family of the GUPTAS,' a name so well known to us from the *Bhitari* inscription and from our *Canouj* coins. That his sway was nearly as potent as the expression 'lord of a hundred kings' would seem to convey, I shall have hereafter occasion to prove by the exhibition of his own name and of that of his predecessor KUMÁRA GUPTA on the coins of *Saurashtra* or *Kattywár* on the western extremity of the Indian continent. The death of this prince is here employed as an epoch in a somewhat enigmatical way. According to the ordinary mode of interpretation, the several figures should be set down from the right to the left hand; thus 30 + 2 + 1 + 100 should be written 1001230; but, as this would be evidently ridiculous, I have rather summed the whole together as '133 years after the death of SKANDA.' It does not appear who succeeded him, or whether the GUPTA dynasty there terminated; but I think it is open to conjecture that the whole power was usurped by the minister's family, because we find TILA BHATTI, a chief magistrate, erecting the *Allahabad* pillar, and we here find a nother of the same name, the opulent BHATTI SOMA, the son of AMILA (BHATTI?) at the head of a new race, not to be sure arrogating to themselves the title of *rāja*, but possessing wealth and power and erecting pillars in their own name. Four generations from AMILA, viz: 1 AMILA, 2 BHATTI SOMA, 3 RUDRA SOMA, 4 MADRA—will give about 33 years to each generation, which for private life may be tolerably near the ordinary average.

The five *Indras*‡ may possibly be the five figures stated by Mr. LISTON to be carved, four on the upper part, and one on the lower of

* *Punyaskandham sa chakkre*; in punning allusion perhaps to his adorning the road with these five images.

† The word seems to be written *Pachaindrám* from the contracted space occupied by the *n* of *पञ्च*. The small figure below has very much the character of Buddha.

‡ The lover of (the hunting of) tigers.

the pillar itself, for there are no other relics in the neighbourhood. As the inscription states, it is placed on the high road in a most conspicuous position, although it had hitherto escaped the eye of an European. We perceive from this specimen that the alphabetical character had undergone no change since the time of SAMUDRA GUPTA, say in two centuries.

Tibetan Inscription from Iskardo.

One of Mr. G. VIGNÉ's first cares, on visiting *Iskardo* for a second time, has been to re-examine the inscription on the base of a mutilated image of BUDDHA of which a sketch was published in Pl. IX. of the fifth volume of this Journal. He has kindly transmitted the facsimile to me, and I have the pleasure to state that it has proved immediately legible to M. CSOMA, who has favored me with the subjoined transcript in modern Tibetan Character, and with a literal translation. He deems it to be an injunction to the people that they should pay respect and adoration to the image, and to the priesthood that they should keep it always in repair.

The facsimile is lithographed in Plate II.

ཨ ། ། ལྷ་ཡོན་བརྒྱུད་རྒྱ
 ཡང་ ། ། ཡུན་རིང་པོར།
 བོ་མཚོད་པ་མདོར་བཅིས་ལེགས་པས། ། ། ལྷ་ཁྱིམ་ཁྱེད་ ། ། མོས་པ་
 བརྒྱུད་དང་སྒོམ་ལམ་རྒྱ་ཆེར་གདབ་པ་དང་ ། ། ལྷ་རྗེས་རྒྱུ་མཚོད་ཁྱེད་ ། །
 དང་པ་ཅན་མམས་ཁྱིམ་ ། ། རྩས་རྩས་ལྷ་ ། ། རྩོམ་གསལ་བའ་བྱ (or བཅི) མཚོད་
 གནས་ཁྱིམ་རྒྱུ་ལ་མ་ ། ། གམས་པར་བཅིལ། ། །

Translation.

“ — the eighty excellencies of the body (visible in the image representing BUDDHA) also (too or again), for a long time (for long continuance sake)—with collected clean offerings, by every one the eight-fold prostration (i. e. touching the ground with his two feet, two knees, two hands, the breast and the forehead) and prayer at large must be performed. And then afterwards also, by the faithful ones, at certain times, the paint (or color) must be cleansed, and the Sacristan (he that has charge of the image) must inviolably observe the established rule.”

Copperplate Grant from Bâkerganj.

This plate was presented in November last, to the Society, on my solicitation, by Baboo CONOYLAL TAGORE, in whose possession it had remained for some months previous, having been dug up in the *char* land, or land deposited by river inundation, of a *zemindâri* or estate belonging to him in perganna *Edilpur*, zilla *Bâkerganj* about 120 miles directly east of Calcutta.

No little curiosity has been astir among the Baboos of Calcutta to ascertain the contents of this curious document, as it is I believe the first that has been discovered treating of the *Bellâla* kings of Bengal. I should not have thought it possible from the appearance of the copper, which is in perfect preservation, and still sharp in the letters, that the plate could have been long buried in the place where it is stated to have been found. The seal, which is an elaborately executed figure of SIVA cast in copper, of great delicacy and taste, is uninjured by time even in the minute limbs and weapons which protrude undefended from the trunk. I have given a very rough sketch of this seal in Pl. II. of the natural size, and certainly it bears evidence of having been somewhere preserved with the greatest care for the seven centuries which have transpired since it was engraven, and of its having been only recently buried in the alluvial ground, perhaps by the upsetting of some boat traversing the spot during the inundation.

Seeing the depth and perfection of the engraving, I endeavoured to print off directly from the plate a facsimile of the writing on both sides, by inking the surface with printer's ink and carefully pressing upon it a moistened sheet of paper:—the impression thus taken I immediately passed between rollers with a plain sheet so as to obtain a reversed or rather rectified facsimile fit for transfer to a lithographic stone. With the assistance of the officers of the government lithographic press I at length succeeded in effecting the triple transfer with tolerable success, retouching the writing on the stone where the letters had become too much filled up by the operation. We have thus in Pl. III. a copy of the whole which, though imperfect in the finer strokes is legible throughout, and more trustworthy than any copy made by the eye alone. M. JACQUET of Paris, I fancy, employs the same method in lithographing inscriptions both from plates and stones. Their size renders the latter inconvenient.

The character of this inscription is rather less simple than the earlier alphabets of the *Pâla* dynasty. It is strictly the *Gaur* character whence has descended the modern written Bengâlî*.

* It is much to be regretted that when first a fount of Bengâlî type was prepared, the letters were made after the model of the running hand or writing instead of this which may be called the *print* hand. Had the latter been taken, the dif-

GOVINDA RA'MA, the Society's pandit was entrusted with the transcription of the contents; and his work was revised, where difficulties occurred, by KAMALA'KA'NTA: while the English version was made under their explanation by young SA'RÓD'APRASA'DA.

The purport of the whole is, a grant in perpetuity to a brahman named ISWARA DEVA SARMA, of the Vátša tribe, of the villages of *Bágúlé Bettogáta* and *Udyamána* situated between four equally unknown places in *Banga*, or Bengal: unless *Garhaghataka* be *Ghoragháta* in the *Dinájpur*, or *Vikramapur* the place of that name in the *Dacca*, district. The mention of tanks of fresh water, with houses built on the raised banks for protection against inundation,—of the neighbouring jangal in the west, and of the saline soils, is in favor of the locality being in the *Bálkerganj* district itself, on the edge of the *Sundarbans* where sea salt is still manufactured. Probably the *Chanda Bhandá* tribe made over as property along with the soil may have been the poor class named from this tract (quasi *Sandabanda* as indeed it is generally pronounced) employed in the salt works, and like the modern *Molangís*, only a step or two removed from slavery.

Regarding the *Vaidya* dynasty of Bengal (so called from its founder being of the medical caste) there is the same uncertainty as in almost all other portions of Indian history. Some make ADISUR the progenitor, he who is stated to have applied to the reigning king of *Canouj*, *Kanyakubja*, for a supply of brahmans for the Bengal provinces; but the catalogues recorded on good authority in the *Ajín Akberí* place the whole of the *Bhupála* dynasty, extending to 698 years, between ADISUR and SUKH SENA the father of BALLA'LA SENA who built the fort of *Gaur*. No mention of either of these parties is made in the present inscription, but on the contrary the father of BALLÁLA SENA is distinctly stated to be VIJAYA SENA; and as this is I believe the first copperplate record of a grant by the family, we should give it the preference to books or traditions, on a point of history so near its own time: for KEŠAVA SENA is but the fourth in descent from VIJAYA, on the plate; or the fifth, if we take ABUL FAZL'S list.

Ajín Akberí list.

1063	SOOKHSEIN, reigned.....	3 yrs.
1066	BILLALSEIN,.....	50
1116	LUKHENSEIN,.....	7
1123	MADHOWSEIN,.....	10
1133	KYSSOOSSEIN,	15
1151	SUDDASEIN,.....	18
1154	NOWJEH, or	3
1200	(LAKSHMANIYEH) the last.	

Inscription.

VIJAYA SENA.
BALLA'LA SENA.
LAKSHMANA SENA.

KEŠAVA SENA.
considered the last by the Bengálís.

ference between it and the Devanágari is so slight that gradually they would have become amalgamated; at any rate the reader would with facility have perused both, instead of deeming them, as now, distinct characters.

It is curious that wherever the name of KESAVA SENA occurs on the plate, there are marks of an erasure; as if the grant had been prepared during the reign of MA'DHAVA SENA, and, on his dying before it was completed (for such a plate must have taken a long time to engrave), the name of his successor KEṢAVA, fortunately happening to be of the same prosodial quantity, was ingeniously substituted, and *mutato nomine*, the endowment was completed and promulgated. KESAVA must have been in this case the brother of MA'DHAVA.

Little of the historical occurrences of KEṢAVA'S reign are to be gathered from the inflated eulogistic style common to this species of composition. It is said in general terms that he kept his enemies in awe, that he was religious and bountiful to the priesthood. There is considerable poetical ingenuity in the triple similes applied to the smoke of his sacrificial fires, and to that of the sparkling of the moon-beam in the second verse. The allegory of the bird with two dissimilar wings at the opening of the inscription might be thought to apply rather to the moon than the sun; but the SURYA SIDDHANTA, according to the pandit, shews that the sun has as much to do with the phenomena as the moon—or in fact that the moon, when east or west is, as it were, a wing to the sun:—thus

अर्काद्विजिःस्तः प्राचीं यद्यात्यहरहःशशी
भागैर्द्वादशभिरुत्स्यात्तिथिश्चान्द्रमसंदिनं ॥

“From the sun retreating eastward when goes each day the moon by twelve degrees, that forms the *tithi*—the moon's day.”

The title of *Sankara Gaureswara* applied to all the members of the family may mean either the auspicious lord of the city of *Gaur*; or it may convey a sly hint, by the substitution of शङ्कर for सङ्कर (mixed race) of the inferior caste of this *Sena* dynasty.

Nothing is said of the miraculous descent of BALLÁLA SENA, as before remarked: but he is said to have worshipped *Siva* for many hundred years (in former generations) to obtain so famous a son as LAKSHMANA SENA, who seems to have been the hero of the family, erecting pillars of victory and altars at *Benares*, *Allahabad* and *Jagannátha*. It may however be reasonably doubted whether these monuments of his greatness ever existed elsewhere than in the poet's imagination.

The date of the grant is very clearly written in the lowermost line संशुद्धदिने *samvat 3 jyaistha dinè* ... but the rest is not legible. The third year doubtless refers to the reign of KEṢAVA SENA, which brings the age of the plate to the year 1136 of our era.

Here follows GOVINDARA'MA'S version of the text :

श्रीनमो नारायणाय ॥ वन्देऽरविन्दवनबान्धवमन्धकारकारानिबद्धभुव
 नत्रयमुद्धरन्तं ॥ पर्यायविस्तृतसितासितपक्षयुग्ममुद्यान्तमद्भुतखगं निगम
 द्रुमस्य ॥ १ ॥ पर्यन्तस्फटिकाचलां वसुमतीं विश्वगिवमुद्रीभवन्मुक्ता
 कुङ्कुलमब्धिमम्बरनदीवन्यावनत्वं नभः । उद्भिन्नस्मितमङ्गुरीपरिचितादिक्
 कामिनीः कल्पयन् प्रत्युन्मीलतु पुष्पसायकयज्ञोजन्मान्तरश्चन्द्रमाः ॥ २ ॥
 एतस्मात् क्षितिभारनिःसहशिरादर्वीकरग्रामणीविश्रामोत्सवदानदी
 क्षितभुजास्ते भूभुजो जज्ञिरे । येषामप्रतिमल्लविक्रमकथारब्धप्रबन्धाद्भुत
 व्याख्यानन्दविनिद्रसान्द्रपुलकैर्याप्ताः सदस्यैर्दिग्भः ॥ ३ ॥ अवातरदया
 न्वये महति तत्र देवः स्वयं सुधाकिरणशेखरो विजयसेन इत्याख्यया ।
 यदंघ्रिनखधोरणिस्फुरितमौलयः क्ष्माभुजो दशास्यनतिविभ्रमं विदग्धिरे
 किलैकैकशः ॥ ४ ॥ नीलाम्भोरुहसोदरोपि दलयन्मर्म्भाणि कादम्बिनी
 कान्तोपि ज्वलयन् मनांसि मधुपस्त्रिग्धोपि तन्वन् भयं । निर्णिक्ताङ्गन
 सन्निभोपि जनयन् नेत्रकलमं वैरिणां यस्याशेषजनाद्भुताय समरे कौशे
 यकः खेलति ॥ ५ ॥ भासन्निस्त्रिंशन्निद्राविरहविलसितैर्वैरिभुपालवंश्या
 नुच्छिद्योच्छिद्य मूलावधि भुवमखिलां प्रासतो यस्य राज्ञः । आसीत्ते
 जोजिगीषा सह दिवसकरेणैव दोष्णस्तुलाभूद्भ्रैवाशीविषाणामजनि
 दिग्धिपैरेव सीमाविवादः ॥ ६ ॥ खेलत्खङ्गलतापमार्जनहृतप्रत्यर्थिदर्प
 ज्वरस्तस्मादप्रतिमल्लकीर्तिरभवदल्लालसेनो नृपः । यस्यायोधनसीद्धि
 शोणितसरिदुःसञ्चरायां हृताः संसक्तद्विपदन्तदण्डशिविकामारोप्य वै
 रिश्रियः ॥ ७ ॥ श्रीकान्तोपि न मायया बलिजयी वागीश्वरोप्यक्षरं
 वक्तुं नेत्यपटुः कलानिधिरपि प्रोन्मुक्तदोषाग्रहः । भोगीन्द्रोपि न
 जिह्वगैः परिवृतस्त्रैलोक्यवेशाद्भ्रतस्तस्माल्लक्ष्मणसेनभूपतिरभूद्भूलोककल्प
 द्रुमः ॥ ८ ॥ प्रत्युषे निगडखनैर्नियमितप्रत्यर्थिपृथ्वीभुजां मध्याङ्गे जल
 पानमुक्तकरभ्रोद्गोलघण्टारवः । सायं वेशविलाशिनीजनरणमङ्गीर
 मञ्जुखनैर्यनाकारि विभिन्नशब्दघटनाबन्धं त्रिसन्धं नभः ॥ ९ ॥ नूनं
 जन्मशतेषु भूमिपतिना सन्धय्य मुक्तिग्रहं नूनं तेन सुतार्थिना सुरधुनी

तीरे भवः प्रीणितः । एतस्मात् कथमन्यथा रिपुबधुवैधयवत्वव्रतो वि
 ख्यातः क्षितिपालमौलिरभवत् श्रीविश्व वन्द्यो नृपः ॥ १० ॥ न गगण
 तलएव शीतरश्मिर्न कनकभूधर एव कल्पशाखी । न विबुधपुर एव देव
 राजो विलसति यत्र धरावतारभाजि ॥ ११ ॥ बाहू वारणहस्तकाण्ड
 सदृशौ वक्षः शिलासंहतं वाणाः प्राणहरा द्विघां मदजलप्रस्यन्दिनो
 दन्तिनः । यस्यैतां समराङ्गणप्रणयिणो ह्यत्वा स्थितिं वेधसां को जाना
 ति कुतः ह्यतो न वसुधाचक्रेनुरूपोरिपुः १२ ॥ वेलायां दक्षिणाध्वेर्मुघ
 लधरगदापाणिस्वावेद्यां क्षेत्रे विश्वेश्वरस्य स्फुरदसिवरणास्त्रैर्गङ्गाभिर्मि
 भाजि । तोरोत्सङ्गे त्रिवेण्याः कमलभवमखारम्भनिर्व्याजपूते येनोच्चैर्यज्ञ
 यूपैः सह समरजयस्तम्भमाला न्यधायि ॥ १३ ॥ यान्निर्माय पवित्र
 पाणिरभवत् वेधाः सतीनां शिखारत्नं या किमपि स्वरूपचरितैर्विश्वं
 ययालंक्षतं । लक्ष्मोर्भूरपि वाञ्छितानि विदधे यस्याः सपत्न्यौ महाराज्ञी
 श्रीवसुदेविकास्य महिषी साभूचिवर्गोचिता ॥ १४ ॥ एताभ्यां शशि
 शेखरगिरिजाभ्यामिव बभूव शक्तिधरः । श्रीकेशवसेनदेवः प्रतिभभू
 पालमुकुटमणिः ॥ १५ ॥ दृष्टिस्थानमवाप्य विश्वजयिनो यस्य द्विजानां
 पयः पात्रैर्लोहमवैर्हिरण्यपदवीप्राप्तेति को विस्मयः एतस्मिन्नियमाद्भु
 ताय महति प्रत्यर्थिपृथ्वीभुजां यत्पात्राणि हिरन्मधान्यपि पुनर्यातान्ययो
 बर्णतां ॥ १६ ॥ आकौमारमपारसङ्गरभरव्यापारदृष्ट्यावशस्तान्तस्यास्य
 निशस्य वीरपरिघद्वन्द्यास्पदो विक्रमं । निद्रालुं दयितां विहाय चकितै
 दुर्गं प्रवेश्य द्रुतं निर्गच्छिररातिभूपनिवहैर्भास्यद्भिरेवास्यते ॥ १७ ॥
 आकर्णाञ्जलमेलकारविशिखन्तपैः समाजे द्विघां दानाम्भः कण्ठगर्भदर्भ
 कलनैर्गोष्ठीषु निष्ठावतां । नीवीबन्धविसारणैः परिपदि त्रस्तत्कुरङ्गी
 दृशामव्यापारसुखासितां क्षणमपि प्राप्नोति नैतत्कारः ॥ १८ ॥ तापिञ्चैः
 परिशीलितेव सरितां कच्छस्थलीनीरदैर्नीरन्ध्रेव नभस्तटी मरकतैः
 क्लृप्ता भुवः क्षारुहः । नीलग्रावकदम्बकैरविरलाभोगेव मुक्तावली लेखा
 सीददसीययज्ञतभुग्धूमावली खेलति ॥ १९ ॥ कल्पक्षारहकाननानि

कनकक्ष्माभूदिभागाग्निधिरत्नानां पुलिनान्तराणि च परिभ्रम्य प्रया
 सालसाः । एतत् पादपयोधरप्रणयिनि च्छायावितानाङ्गले विश्राम्यन्ति
 सतामनिद्रविदशोद्भ्रान्ता मनोवृत्तयः ॥ २० ॥ किमेतदिति विस्मया
 कुलितलोकपालावलीविलोकिताविष्टङ्गलप्रधनजैत्रजात्राभरः शशास पृ
 थिवीमिमां प्रथितवीरवर्गाग्रणीः सगन्धपवनान्वयः प्रलयकालहरो
 नृपः ॥ २१ ॥ यद्भालयेति या ख्यातिर्लक्ष्म्या एव जगत्त्रये सरस्वत्यपि तां
 लेभे यदाननक्ततालयया ॥ २२ ॥ आरुह्या अंलिहृष्टहृष्टिखामस्य सौन्दर्य
 लेखां पश्यन्तीभिः पुरिविहरतः पौरसीमन्तिनीभिः वार्त्ताकूतैर्नयन
 चलितैर्विभ्रनं दर्शयन्त्यो दृष्टाः सख्यः क्षणविवटितप्रेमरक्षैः कटाक्षैः
 ॥ २३ ॥ एतेनोन्नतवेषसङ्कटभुवासातस्वतीसैकतक्रीडालालमरालको
 मलकलत्क्वाणप्रणीतोत्सवाः । विप्रेभ्यो ददिरे मही मघवतानेकप्रतिष्ठा
 भृतापारप्रक्रमशालिशालिसरलक्षेत्रोत्कटाः कर्वटाः ॥ २४ ॥ इह खलु जंभु
 ग्रामपरिसरश्रीमज्जयस्तन्वावातारात् समस्तस्वप्रशस्युपेत अरिराज
 सूदन शङ्करगौडेश्वरश्रीमद्विजयसेनदेवपादानुध्यातध्यतसमस्तस्वप्रशस्ये
 पेतअरिराजसूदनशङ्करगौडेश्वरश्रीमद्वल्लालसेनदेवपादानुध्यातसमस्तस
 प्रशस्युपेत अरिराजसूदनशङ्करगौडेश्वरश्रीमद्वल्लालसेनदेवपादानुध्यात
 समस्तस्वप्रशस्युपेतअश्वपतिगजपतिनरपतिराजत्रयाधिपतिश्रेणकुलकम
 लविकाशभास्करसोमवंशप्रदीपप्रतिपन्नदानकर्णसत्यव्रतगाङ्गेयशरणागत
 वच्चपञ्जरपरमेश्वरपरमभट्टारकपरमशौरमहाराजाधिराजअरिराजघा
 तुकशङ्करगौडेश्वरश्रीमत्केशवसेनदेवपादाविजयिनः समुपगताशेघराज
 राजन्यकराक्षीवालकराजपुत्र राजामात्यमहापुरोहितमहाधर्माध्यक्षा
 महासान्धिविग्रहिकमहासेनापतिमहादैःसाधिकाचारोद्धरणिकनौबल
 हस्यश्वगोमहिषाजाविकादिव्यापृतगौल्मिकदण्डपाशिकदण्डनायकनेयग
 पत्यादीनन्यांश्च सकलराज्याधिपजीविनोध्यक्षानध्यक्षप्रवरांश्च चट्टभट्ट
 जातीयान् ब्राह्मणब्राह्मणोत्तरांश्च यथाहं मानयन्ति बोधयन्ति समा
 दिशन्ति च विदितमस्तु भवतां यथापौंड्रबडनभुक्त्यन्तःपातिवङ्गे विक्रम
 पुरभागप्रदेशेप्रशस्तलताटघडाघाटके पूर्वेसत्रकाधीयाममःसीमादक्षिणे

साङ्करवशागोविद्धवानानान्तःभूः सीमापश्चिमेश्चकापागादाङ्गयसरया
मः सीमात्तरे वागुलीच्चिगातात्तद्यमानभूः सीमाइत्यं यथाप्रसिद्धस्वसी
मावच्छिन्नावृहन्नृपतिचरणैः शुभवर्धवृद्धौ दीर्घायुष्कामनया समुत्सर्गिता
सा तदायोत्पत्तिका साश्वभूमिः ससादाविविधवासर्गोसरासजलस्यला
खिलपलाशगुवाकनारिकेललताचण्डभण्डप्रवेशवर्तयन्ता आचन्द्रार्कक्षि
तिसमकालं यावत् दिनं तत्सजलनानापुष्करिण्यादिकं कारयित्वा
गुवाकनारिकेलादिकं लगापयित्वा पुत्रपौत्रादिसन्ततिक्रमेण स्वच्छन्दो
पभोगेनोपभोक्तुं वत्ससगोत्रस्य भार्गवच्यवनयापुवत् और्वजामदग्न्य
पञ्चप्रवरस्य पराशरदेवशर्मणः प्रपौत्राय वत्ससगोत्रस्य तथापञ्चप्रवरस्य
गर्भेश्वरदेवशर्मणः पौत्राय वत्ससगोत्रस्य तथा पञ्चप्रवरस्य वनमाली
शर्मणः पुत्राय वत्ससगोत्राय भार्गवच्यवनयापुवत् और्वजामदग्न्यपञ्चप्र
वराय श्रुतिपाठकाय श्रीईश्वरदेवशर्मणे ब्राह्मणाय सदाशिवमुद्रया मुद्र
यित्वा दुतीयाकीयज्यैष्ठ्यादिना भूक्किद्रंन्यायेन चण्डभण्डदण्डताम्रशास
नीकृत्य प्रदत्ता यत्र चतुःसीमावक्त्रिणशासनभूमिर्ह ॥ ३०० ॥ तद्भवद्भिः
सर्वैरेवानुमन्तव्यं भाविभिरपितृपतिभिरपहरणे नरकपातभयात् पालन
धर्मगौरवात् पालनीयं भवन्ति चात्राधर्मानुशंसिनः श्लोकाः ॥ आरुफोट
यन्ति पितरो वर्णयन्ति पितामहाः भूमिदोस्मत्कुले जातः सनस्त्राता
भविष्यति भूमिं यः प्रतिगृह्णाति यश्च भूमिं प्रयच्छति उभौ तौ पुण्य
कर्माणौ नियतं स्वर्गगामिनौ वज्रभिर्वसुधा दत्ता राजभिःसगरादिभिः
यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलम् स्वदत्तां परदत्तां वा यो हरेत्
वसुन्धरां स विष्ठायां कृमिर्भूत्वा पिटभिः सह पच्यते घृष्टिवर्धसहस्राणि
स्वर्गे तिष्ठति भूमिदः आक्षेताचावमन्ता च तान्येव नरके वसेत् सर्वेषा
मेव दानानामेकजन्मानुगं फलं ॥ इति कमलदलांशुविन्दुलोलांशुश्रियमनुचि
न्य मनुष्यजीवितञ्च सकलमिदमुदाहृतञ्च बुद्ध्या नहि पुरुषैः परकीर्तयो
विलोप्याः ॥ सचिवश्रुतमौलिलालितपदाम्बुजस्थानुशासनभूतः

श्रीयुतदत्तोद्भवगौड महामभक्तकः ख्यातः श्रीमन्मह्यसा करणनि
श्रीमहामदनक करणनि श्रीमत् करणनि ॥ सं ३ ज्यैष्ठदिने.....

Translation by Śāroḍāprasāda Paṇḍit.

Aum ! Salutation to NA'RA'YANA !

1. I pray to the rising paradoxical bird (or the sun) of the tree of holy writ (the *Veda*) the friend of the waterlily bushes, the deliverer of the three worlds confined in the prison of darkness, who spreads abroad alternately his wings one white and the other black (the semilunations). May that moon shine propitious, who revivifies the fame of him who wears the flowery shafts (KA'MA), making by his rays the airy sphere as it were spread over by the water of the heavenly river, the earth as if scattered over with crystalline mountains, the ocean as if filled with pearls unfolded, and the sides resembling women adorned with the blowing spikes of flowers.

3. Of this line (the *Chandra vamsa*) was born a race of kings, whose hands were employed in giving rest to the chief of serpents, oppressed with the weight of the world; whose courtiers filled every side of the world, and the explanation of whose works, written in incomparable strings of words, is delightful.

4. In this noble line was born a rāja by the name of VIJAYA SENA, as an incarnation; who was as it were himself the god who wears a crescent on his head; at whose toe nails the rājas putting their heads (bowing) made others mistake them for the bow of the ten-headed (RA'YANA).

5. Whose sword plays in the war to the astonishment of all people, and which (sword) though like the blue lily crushes the spirit of men, though beautiful like the clustered clouds gives pain to the heart of men, though black shining like the *madhūpas* (black honey bees) is an object of terror, and though like smeared kajjaka*, is painful to the eyes of his enemies.

6. He, this rāja, had the desire of overcoming the sun in glory (with respect to his spirit), who governed this whole earth by rooting out the families of the inimical royal lines by the sleepless attempt of his shining sword: whose (the rāja's) hands were properly compared to serpents; and who was in disagreement with the lords of the cardinal points (*Dikpāla*) for the boundaries (of his possessions).

7. From him was born BALLA'LA SENA, who by his creeping-plant-like playing sword stole sweeping the heat of the pride of his enemies, whose fame was unrivalled, and by whom was stolen the Lakṣmī (or wealth) of his enemies, being placed in an elephant-tusk-like palanqueen at the limit of the field of battle which was impassable on account of the river of blood.

8. From him was born LAKṢHMAṆA SENA, who was the *kalpa-drūma* (tree of desire) of the earth; who, though master of immense wealth, did not conquer the bold by stratagem (but by force); though master of *Kala*† (the moon) did not accept the *dosha*‡; and could not say "No" though he was

* Considered as a collyrium being applied upon the eyelashes or eyelids medicinally or ornamentatively.

† The word *kalé* has two meanings, the 64 qualities and the digits or minutes of a degree.

‡ The word *dosha* has two meanings,—faults when with rāja, and night when with moon.

acquainted with all the words; and who, though the most happy of men (or the *bhogindra*, lord of *sesnág*) was not surrounded by the double-minded (or snakes).

9. Who (the *rāja*) caused three different sounds to be made to the sky in the three *Sandhyās* (the three periods of a day, the dawn, the noon, and the evening). In the dawn the sounds of the iron chains of those imprisoned *rājas* who were his enemies; at the noon the loud ringing of the bells on the young elephants and camels, led forth to be watered; and in the evening the pleasing sounds of the *manjīras* (ornament for the feet or toes) of female visitors, beautified by their evening dresses.

10. The *rāja* (BALLA'LA SENA) being desirous of having a son, left all kinds of enjoyment and assiduously worshipped HARA (SIVA) in many hundred prior births on the bank of *Suradhunī* (*Gangā*) for the birth of this prince; otherwise so famous a prince (LAKSMANA SENA) would not have born from him, who was the head of all *rājas* and praised by the universe, and whose resolution widowed the wives of his enemies.

11. Who when born and existing on the earth, the moon was no longer solely on the firmament; nor the kalpa tree on the golden mountain, neither the chief of the gods only in the city of the *Devas*, (i. e. they were here also).

12. Who knows why the creator, having made his fond stay in the field of battle, did not create his rival enemy in this sphere of the earth? His hands were like the trunks of elephants and his breast hard as stone; his shafts were fatal to his enemies and his elephants were exuding juice from their heads.

13. By him were erected many pillars for victories in battle, high sacrificial posts near the altar of *Mushaladhara* and *Gudāpānī* (*Balarāma* and *Jagunnātha*) situated on the coasts of the South Sea; at the holy place of *Visvēswara*, (or at *Kāshī*) where fall the streams of *Asi* and *Varanā*, into the waves of *Gangā*; and on the banks of *Trīvēnī* (*Allahābād*), which became truly sacred and pure, for its being the place where he who was born from lilies (BRAMHA) commenced his sacrifice.

14. His chief queen was VA'SUDEVĪ the jewel of the heads of *Satīs**, and after creating whom the creator thought his hands to have been sacred; whose astonishing charms and conduct adorned the universe, and whose *Sapatnīs*† Earth and Laksmī fulfilled her every desire. Nay she was worthy of obtaining the *Trivargas* (or the three human objects of pursuit, viz. virtue, wealth, and love.)

15. From them was born KEṢAVA SENA DEVA, who was the jewel of the crown of his inimical *rājas*, as was born SAKTIDHARA (*Kārtika*) from him who wears a crescent on his head and GĪRYA (the mountain-born goddess).

16. It is not wonderful that at the glance of him, who conquered the universe and turned the golden vessels of adverse *rājas* into iron, that the iron drinking-vessels of the brāmans should be turned into gold!

17. The multitude of his inimical *rājas* hearing of his strength, instantly starting with fear and leaving their dear sleeping consorts, quickly enter-

* Virtuous women, who burn themselves with their husbands' corpses.

† A woman whose husband marries other wives.

ed their ramparts and being disappointed of a firm shelter there, immediately came out and are wandering here and there ; whose (the rāja's) mind was devoted from his childhood to the occupations of numerous battles and whose station was praised by the assembly of heroes.

18. The hands of this rāja were not for a moment inactive,—towards his foes in firing arrows drawn home to his ear,—among the assembly of polite men in hold the *durvha* (sacrificial grasses) moistened with the drops of water, for consecrating gifts,—and among bashful lovely-eyed women in loosening their waist cloths.

19. The smoke of whose burnt-offerings plays over the world, making it appear as though the banks of rivers are skirted with *Tūpinja* trees,—that the sky is involved in thick clouds and all the trees of the earth seem to be covered *Márukatas* (emeralds) and most of the pearls seem to be changed to the color of sapphires.

20. The wishes of honest men tired with wandering for wealth in the forest of *Kalpa* trees, in the broken mountains, in mines of gems, and on the shores of oceans, are at last lying under the canopy of his cloud-like feet for rest, (i. e. he has fulfilled their wishes.)

21. He (the rāja) who was like *RUDRA* in *Pralaya* (the end of a *Kalpa*) and born from the race named *Gandhapavana* and the first of those who were praised by the famous heroes, governed this earth. Whom when the contending rājas beheld when leading their expeditions for victory, they were struck with wonder and exclaimed, “What is this?” their whole thick army being at once put into confusion!

22. Even *SARASWATĪ* (the goddess of wisdom) having lived in his mouth gained the title *Pudmáluya* (whose dwelling-place is the lily) which *LAKSHMĪ* enjoys in three worlds.

23. The wives of the interior of the rāja who were always seeing his beauty, when he played with them on the top of the lofty cloud-reaching palace and cast his eye on the damsels, shrunk under it, yet still courted it, coquetting in gesture and motion through evident desire.

24. By him who was like *INDRA* on earth were granted to the brahmanas many famous villages with high buildings; which (villages) contained many fruitful and smooth fields and were pleasant with the sound of the geese that were sporting in the sands of the rivers near, and the rice of which became the best of its kind when boiled.

The victorious and honorable emperor *KES'AVA SENA DEVA*, who was possessed of fame, the king of the three sorts of rājas, namely, *Aswapatī*, *Gujapatī* and *Narapatī*, like the sun in expanding the lily-like *Sena* caste, the lamp of the lunar line, famous as *KARNA* in gifts, voracious as *GA'NGEYA* (the son of *GANGA'*, or *BHĪ'SHMA*) a cage hard as *Bujra* to the refugees, the most rich, learned, the great hero, the king of kings, the destroyer of his enemies, and entitled *Sankara Gaureswara*, who was a dutiful son of *LAKSMANA SENA* entitled also *Sankara Gaureswara*; who (*LAKSMANA SENA*) achieved his own fame, suppressor of his enemies and al-

ways meditating on the footsteps* of his father BALLA'LA SENA ; who (BALLA'LA SENA) was also titled *Sankara Guureswara* and possessed of fame, subduer of enemies, and who meditated on the footsteps of his father VIJAYA SENA ; who (VIJAYA SENA) was also possessed of self-earned fame, for his putting down (securing) the load of victory from his shoulder which he gained by conquering all this *Jambú Grāma* (India), and who was the destroyer of his foes, and entitled *Sankara Guureswara*,—now duly intimates, informs, and commands to the rājas and rājanyas (the caste of Khetriyas) that were present with him, and the queens and their children, the princes, the royal ministers, the priests, the judges, those who were experienced in war and peace, the chief commanders, wrestlers, the peons who apprehend robbers, naval officers, masters of elephants, cows, goats and woolen cloths, keepers of gardens, the executioners, the magistrates, the moralists, peons, those who were supported from his kingdom, superintendents over his dominions with their chiefs, men that belong to the tribe called *Chanda Bhandā*, and their chiefs, and many other rulers—to this effect :

“ Be it known to all of you that this great rāja, on his birthday to prolong his life has consecrated with water and presented to the brahmana, named ISWARA DEVA SARMA, with a copperplate *s'āsunam* on which an image of *Sudās'iva* is riveted, who (the brahmana) was the descendant of *Vatsa mūni*, of five *Pravaras*† ; namely, *Bhārgavo*, *Chyāvāna*, *Apuvat*, *Aurva*, and *Jāmadagna* ; the reader of the holy texts, (*Srutī*) and the son of BANAMA'LI' SARMA the descendant of VATSA, of the above five *Pravaras*, the grandson of GARBHESWARA DEVA the descendant of VATSA, of the above five *Pravaras*, and the great-grandson of PARA'S'ARA DEVA SARMA, the descendant of VATSA of the same *Pravaras*,—the land of the villages *Bāgūli*, *Bettogātātodyumāna*, which is encompassed with these famous boundaries ; on the east by *Pranaginātāna Gharhāghātuka*, near *Vikramapura* in *Banga*, which is in *Paundraka*‡, as *bhakti* (or as a jageer) ; on the south by the village named *Sattrakādhī*, on the west by *Sānkara* (?) *Govinda*, which looks high with jungals, and on the north by the village *Panchaka Pagado* ; for the peaceful enjoyment of his sons and grandsons, &c. &c. as long as the moon, the sun, and the earth shall endure. Which (village) is perpetually inheritable, well-governed, and not to be claimed by any of his relatives (such as an elder brother, &c.) and which contains houses on the margin of pure tanks, holes, saline soils, both the land and water, all sorts of shrubs, the trees of betelnuts and cocoanuts, and the trihe called *Chanda Bhandā*, and in which (ere he has consecrated it) he caused the ponds to be made, and the nut and cocoanut trees to be planted. Besides he has given him the power of punishing the Chanda Bandas.

* पदानुध्यात reflecting on his feet, or the hereditary successor of.—ED.

† The disciples of the MUNI from whose progeny were the brahmins descended.

‡ *Paundra* is the country extending from *Rangpur* across the Ganges to the *Jangalmehals*, including most of Bengal. *Wils. Dict.*—ED.

“ In this copper sásanam are written 300 (perhaps bigás.)

“ Therefore you must allow him to enjoy the same ; as also shall the future rájas maintain it, with consideration that deprivation will doom them to hell, and maintaining will do glory to their virtue.

Some religious Slokas are written on this subject.

“ When any body gives land, his ancestors praise and boast themselves, saying that a land-giver is born in our race, and he will be the deliverer of us. He that presents lands and he that receives it, both of them are worthy of going to heaven.

Again : “ this earth though enjoyed by several kings as *Sugar* rája, &c. &c. yet whenever any one possess it he is the sole enjoyer of its produce.

“ He that deprives the land given by him or by any other person will rot in ordure, being born insects in it with his forefathers.

“ He who presents land lives 60,000 years in heaven, but he who abuses or disregards it is doomed to hell for the same period.

“ The effects of giving other things are to be enjoyed for one life*.

“ Men, considering human life and prosperity as fickle as the water on the leaf of the lily, and understanding what is already said, should not destroy the fame of others.

“ This *sásanam* of the (prince) whose feet are kissed by a hundred ministers : (signed on his part by)

“ His Majesty’s almoners the high in authority, *Sriman MADYASA KARANANI*; *Srimahá MADANAKA KARANANI*; *Srimat KARANANI*.

“ In the year (of reign) 3 ; the month *Jyaistha* on the day—”(the rest obliterated.

4. *Inscriptions on Jain images from Central India.*

In the course of the year 1836, a number (nine or ten) of Jain images of marble were exhumated at *Ajmír*, from what is now a Musalmán burial-ground, and in the immediate neighbourhood of an old Jain temple beyond the *Durgáh* of the *Khawaja Sáhib* on the ascent to *Tárágarh*. Lieut. E. MADDEN, in obligingly communicating the above intelligence, furnished me with a copy of the line of writing inscribed on the base of three of the images, in hopes it might afford some historical aid, however limited, to our store of dates and names. One of these inscriptions I have inserted at the foot of Plate II. Omitting the drawing of the naked Jain saint kindly made by Lieut. OLDFIELD, because it differs in nothing from the ordinary images of the *Digambarí* class, so frequently represented ; they are seated cross-legged with their hands joined ; their ears are long and split, and their hair in the small round knobs or curls which have led many to give these images an African origin.

* In this half sloka, a few words are wanting to complete the verse, the meaning of which should be “ but the effects of presenting land are enjoyable for endless lives.”

The following version of several of the inscriptions was attempted by Lieut. MADDEN's pandit at *Ajmír*. The first being intended for that represented in the plate.

- १ संवत् १२३६ फा सुदी ४ सुक्रे साधुलाहड पतनी तोलीत धासेडी बज्जबिल बितसी लघभसी महासीमलिनाथप्रतिमाकारपिताः ।
- २ संवत् १२४३ वैसाघ सुदी १ श्रीमूल संयेदेव श्रीवासपूज्यः प्रतिमा साधुहालण सुतवर्द्धमान तथा यांत देवतथा साधुपुत्रमादिपाल देवप्रतिमा प्रतिष्ठापितमिती ।
- ३ संवत् १२३४ जेठसुद १३ बुधदिने साधुबुल्हा पुत्रवान हालू श्रीपार्खनाम देवपाल प्रणमतिमिहा ।
- ४ संवत् १२४७ बैसाघ सुद १५ श्रीमूलसंयेसाधु बज्जमानपत्नी आस्त कर्मक्षयार्थे प्रतिष्ठापित श्रीपार्खनाथ प्रतिमा पुत्रमहीपालदेव ।
- ५ संवत् १२३६ फा बदि ४ सुक्रे आचार्यमाणिक्य देवसिध्यसोमदेव अर्जिकामदन श्रीसर्वगोष्ठिका प्रणमति ।
- ६ संवत् ११६५ आगणसुदि ३ आचार्य गदानंदीकते पंडितगुणचद्रेण शान्तिनाम प्रतिमाकारिता ।

एव मूर्त्तीका तो आंक्य बंध्या सो लिख्या अर तीन मूर्त्तीं पर तो आंक हैन्हीं अर देयका आंक बिलकुल पढागयान्हीं ।

Whatever may be the correctness of the rest, the plate specimen certainly does not accord with the pandit's version as to the name of the image, which is clearly *Prajitanáth*, one of the 24 Jain saints : another is as evidently *Mallinátha pratimá karapitá* 'the image of MALLINÁTHA was caused to be made,'—and doubtless the whole would be found in any list of the Jain *Tirthankaras* (see Useful Tables 87). *Párswanatha*, *Varddhamána*, *Vásupádyá*, and *Chandraprabhá* of this list are found in the present inscriptions. The inscriptions are couched in the *Prákrit* dialect, and their chief merit is in being specimens of the Jain character of the 12th century. I read the line in the Plate thus :

Sam. 1239 Pha. sudi 4, Sukrè ; sadhuváha-acháryyamadana Srí Putra pandu (?) láhadena, Prajitanátha pratimá kárápítá."

VI.—*Extracts from the Journal of Lieut. MARKHAM KITTOE, submitted to the Asiatic Society at the meeting of the 6th Oct. 1836.—Ruins and Pillar at Jájipur.*

Sunday the 27th Nov.—Halt to-day.

Having made previous arrangements for a visit to *Jájipur*, I started at 4 A. M. in company with about a hundred men of the corps proceeding to pay their devotions at the famous *tírath* or *khetr* resting (as the Hindus assert) on the navel of the great *Gaya Asura*. At this place all good Hindus make offerings to their deceased relatives termed "*pinda pharna*:" a notice of the ceremonies attending which is to be found in STIRLING'S account of *Orissa*. I had no leisure to make many inquiries or to visit every object worthy of notice, yet I still saw a great deal which duly repaid me for my long ride of six miles there and six back again with a burning sun over my head.

The first place I visited was the mosque in the outskirts of the town, where there formerly stood the palace of the Súbehdars of the province MUHAMMAD TAKI' KHA'N, ABU NASAR KHA'N and others. The mosque is rather a pretty object but of rough workmanship.

Over the centre archway is an inscription of five verses placed in five "howducs" or compartments in the style of the reign in which the mosque was built, the verses run thus:

ظل ظلیل رایت اورنگ زیب شاه اوصاف خلق ورتبه نواب مستطاب
گسترده باد تاكه زانجم نشان بود پیش از توان و قدرت نطق و بیان بود
در شهر جاجپور بنا کرد مسجدی
کین نهه نملک بگنبد سقش نهان بود
تسبیح قدسیان شنوی اندرو اگر مسجد چو شد زمان ابونصرخان بنا
یکشب ترا مقام درین آستان بود تاریخ او زمان ابونصرخان بود

The English of which is nearly as follows:

1

"May the Shadow of the insignia of the Emperor AURANGZEB
Be spread as long as the stars cast their light (shine.)

2

The praises and good qualities of the excellent Nawáb
Are greater than in the power of the poet to describe.

3

In the town of *Jájipur* he laid the foundations of a mosque
Beneath the domes of which the nine heavens are hidden.

4

Oh would you hear the angels recite the prayers
You must pass one night therein.

5

As the mosque was made in the time of A'BU NASSAR KHA'N
So its date is "the time of the Nawáb A'BU NASSAR KHA'N."

The year of the Hegira 1093 A. D. 1686.

By this inscription it would appear that the mosque was built in A. D. 1686 by the Nawáb ABU NASSAR KHA'N and not MUHAMMAD TAKI' KHÁN as stated by Mr. STIRLING.

At a short distance from the mosque is a dargáh or shrine of a Mussulman saint who destroyed a famous temple and converted the terrace, on which it stood, into an open mosque and burial-place for himself and family. Beneath the terrace are three idols of enormous dimensions and exquisite sculpture, representing Indráni, Varáha and Káli: the latter figure is the most worthy of notice though a more hideous object could not well be imagined,—it resembles (as it were) a living skeleton of an old fury. Mr. STIRLING gives a good account of these fine specimens of ancient Hindu sculpture; it is much to be regretted that these idols have so suffered from the mason's chisel, in late years employed by an European officer to detach "relics!" A part of the *mund-mála* of Káli and a hand of Indráni have been thus lost. It is also a great pity that these curiosities are not removed to the museum in Calcutta (which could easily be done in the rainy season) and thereby placed out of the reach of such would-be-antiquarian relic hunters.

The following are the dimensions of the figures.

KA'LI', base 6 feet 0½ inch; height 9 feet; thickness at the base 1 foot 4 inches.

INDRA'NI', height 8 feet 10 inches; breadth at the base 5 feet 9 inches; thickness ditto 3 feet 1½ inches.

VARÁHA, height 9 feet 10 inches; breadth at the base 5 feet 11 inches; thickness ditto 3 feet 6½ inches.

I regretted my inability (for want of time) to make drawings of the three figures.

Having through the attention and exceeding politeness of the Munsif ABDUL AHID (who resides near the mosque) procured guides to shew me all that is to be seen in and near *Jajipur*, I visited the different temples, none of which are worthy of notice or at all ancient, though they occupy the places of those destroyed by the Muhammadan conquerors. About a mile and a half from the mosque behind the town, I was shewn a very elegant pillar of which the accompanying is a sketch; it is

of black chlorite and highly polished. I could obtain no information worthy of credit regarding it; it is called *Sivastambha* and is 35 feet high; the shaft is 19 feet 8 inches, the base 6 feet, consequently the capital is 9-4, consisting of three separate blocks which have been shaken out of their original position: indeed I doubt their originality.

The column is a polygon of 16 sides slightly concave. It would be useless conjecturing the origin of this elegant column, or even the former locality of it; it certainly was not always in its present situation but has been fixed in some building, perhaps a terrace, now no longer in existence.

Want of time again prevented my visiting a curious place said to be on a hill 3 miles off, but, God willing, I shall pay a special visit to *Jājipur* at some future period, where I shall devote a few days to hunting out and remarking upon all its now unknown curiosities.

I remarked a number of Jain and Buddhist figures in different places scattered about.

I omitted to state that an assertion of the villagers that a fine figure of *Garuḍa* was formerly at the top of the pillar and had flown away and alighted a mile off when KA'LA'PA'HA'R came to commit his ravages at *Jājipur*; since which it had remained there and had had a small temple erected over it. Curiosity led me to the spot: I was shewn within a small temple an elegantly executed figure of *Garuḍa* of black chlorite, a sketch of which I annex; it rests on a shaft (sunk in the ground) exactly similar in dimensions to the *Sivastambha* and may probably have belonged to it.

In the suburbs I remarked an ancient bridge similar to that over the *Kanse-banse** but nearly buried in the earth, the accumulation of ages. A river called *Mudagin*, used in former times to flow through it, but of which there is scarcely a visible sign left; the bridge is of itself very ancient and constructed of materials taken from buildings of more remote date still. Figure (1) is an elevation of one of the arches† which struck me as very peculiar: it will be observed that there is a regular keystone in lieu of the more common block architrave. Figure (2) shews the manner in which the stones project and are finished off on the starlings, that is, on the face towards the stream.

The huts and houses in the town (which is very straggling) are remarkably neat and are all on stone terraces‡ raised to the height of 4 and 5 feet, a very necessary precaution in a place subject to inundations as this is; the country is a very few feet higher than the bed of the

* This is the place alluded to in the *Udayagiri* inscription, see last No.—ED.

† A represents the face towards the stream, and B the opposite side. The actual form of the arch is not altered by this arrangement.

‡ Hewn stones from the different ruins.

Baitarani. There are numerous tanks and swamps which together with the forest of cocoanut and other trees as well as bamboos must render it very unhealthy.

The brahmans are more troublesome here than in any place I have ever yet visited; they complained loudly of their loss since the high road through *Akua Padda* had been established, which deterred pilgrims from visiting their *khetr**. I must now take leave of *Jájipur* and conclude with stating that I returned to camp late in the evening much fatigued, having been in motion alternately on foot and on horseback for the space of fourteen hours; but I considered myself amply repaid for my trouble.

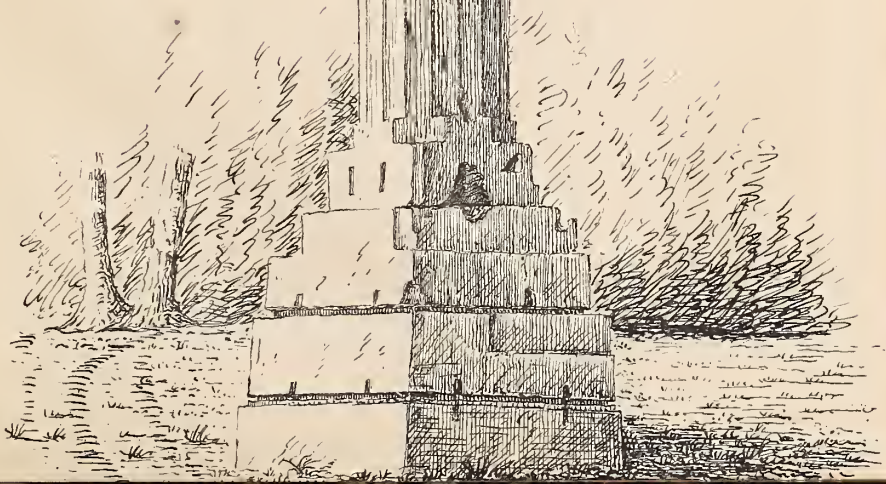
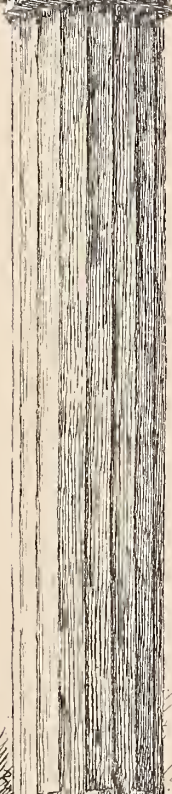
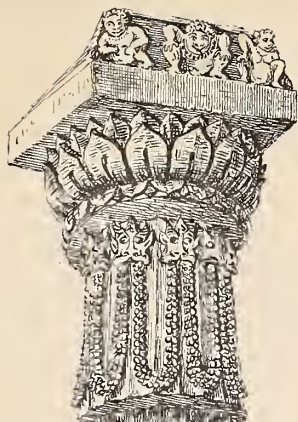
VII.—*Remarks on "a Comparison of Indo-Chinese Languages, &c.*
By the Rev. W. MORTON.

The paper which appeared, under the above title, in the last, or December No. of the Journal of the Asiatic Society, was no doubt perused with much interest by many of the readers of that periodical. The importance of such a comparison, as was therein partially instituted, of the very numerous languages or dialects spoken both within and beyond the Ganges, is, in every point of view, very considerable. Whether we aim at ameliorating the civil institutions of the various tribes among whom they are the media of intercourse, or to communicate to them the arts and sciences and purer religion of the west, and to elevate them above the debasing influence of cruel, impure and abominable superstitions; or whether we seek merely to obtain an accurate as well as extensive acquaintance with these various dialects—in all points of view such investigations, as those in question, are most important; and the present efforts to obtain information of a philological nature by the Sadiyá missionaries, directed to these ends are consequently highly laudable.

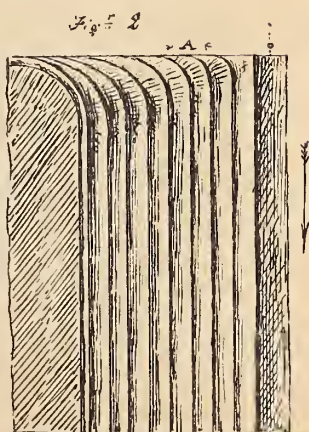
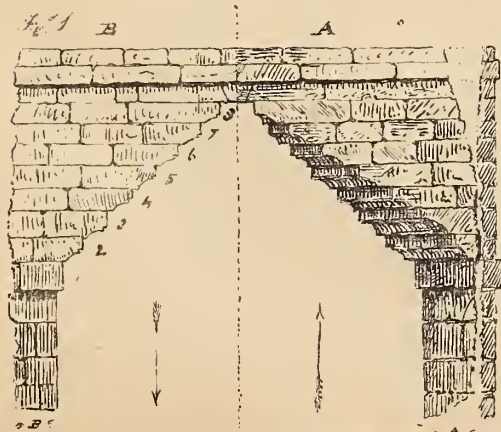
1. Of their execution of the task undertaken I can say but little, and that little must almost be confined to the language of our own Province of Bengal. Of course the excellent individual who furnished the "Comparison," will take my observations in good part, as my design is simply, and in good faith, to throw in my mite of aid to him in his useful investigations, as well as to draw the attention of others to the subject.

1. In the "Comparison of the Bengáli and Asámese," it is stated that "above six-tenths of the most common words are identical, except with slight variations of pronunciation." Now I have carefully examined the list of words from which this conclusion is drawn, and find that upwards of *eight-tenths* would be the more correct statement; and that, of the 60 words, 50 are identical in Bengáli and Asámese. For, the most has not been made of the analogy between the two languages, by the introduction,

* The high way to *Cuttack* lay through *Jájipur* before the new road was made.







into the Bengáli column, of such secondary forms in current use as come far nearer, in many cases, to the Assamese terms, than those given in the "Comparison." Thus *báyu* is compared with *botáh*, while *bát*, equally a Bengáli form, is omitted. So, with *asthi* a bone, should have been given *hár*; with *karṇa*, *kán*; with *hasti*, *hátí*; with *pitá*, *báp*; with *matsya*, *máshh*; for *puṣpa*, *phul*; for *mastak*, *muy*; with *shringa*, *shing*; with *bānur*, *bandar*; with *chandra*, *chánd*; for *jananí*, *má*; with *rátri*, *rát*; with *tail*, *tel*; for *prastur*, *shilá*; with *danta*, *dánt*; with *grám*, *gán*; all identical, or very nearly so, with the Assamese of the table.

In the same use of secondary forms, the results of comparison with some of the other columns also would be slightly varied; as the Bengáli *go*, a cow, would much more nearly resemble the Khamti *ngó* and Siamese *ngóá*, than *garu* (the only form given) from which the Assamese *gorú* is drawn. Thus too, were *tej* and *lauha* given in the Bengáli column, for blood — with the former, signifying *vigour*, the principle of vigour (and so applied to the brain, marrow, bile, semen, &c.) would agree the Assamese *tez*, the Jili *tashai*, the Koreng *tazyai*, &c. while the latter would appear to have originated the Khamti *leüt* and Siamese *lüat*; whereas *rakta* shews no agreement with either. The Assamese *póruá*, an ant, might shew a resemblance to the Bengáli *pinpará*, though none with *pipáliká*, &c. These and others we shall reduce to a table as follows.

English.	Bengáli.	Asámesé.	
Air	bát	botáh	
Ant	pinpará	poruá	
Arrow	shar		Cor. sar
Blood	tej, lauha	tez,	<i>Kha.</i> leüt, <i>Si.</i> lüat, <i>Ji.</i> tashai, <i>Kor.</i> tazyai
Boat	nau, dingí	nau,	<i>Ana.</i> ding
Boue	hár	hár	<i>Man.</i> sarú, <i>Song.</i> karau, <i>Ch.</i> sorú, <i>C. T.</i> urú, <i>S. T.</i> ará, <i>Lu.</i> arü, <i>N. T.</i> arükáu
Cat	márjár	_____	
and myáo, a cat's mewling, whence myáo-kári, the mewer		mekúri	<i>Kh.</i> miú, <i>Si.</i> meau, <i>Gar.</i> menggó, <i>Song.</i> and <i>Kor.</i> myauná, <i>An.</i> meyü
Cow	go	_____	<i>Kh.</i> ngó, <i>Si.</i> ngóú
Dog	shwá	_____	<i>Bar.</i> khwé, <i>Sing.</i> kwí, <i>M.</i> hwí, <i>Song.</i> shí, <i>Kap.</i> &c., <i>wí.</i> <i>An.</i> shó
Ear	káu	kán	<i>Ji.</i> and <i>Kap.</i> kana, <i>Koren.</i> kon. <i>Ch.</i> khunú, <i>Lu.</i> khaná
Elephant	dantí	_____	<i>Mish.</i> dátón
Father	báp, bápu, bábá, bupai,	_____	<i>Ak.</i> ábba, <i>Abor.</i> bábu, <i>Maring.</i> pápá, &c.
Fire	poran (to burn)	_____	<i>Co.</i> púr
Fish	máshh	mas	
Flower	phul	phúl	
Foot	pá	_____	<i>Mar.</i> <i>Lu.</i> and <i>Song.</i> phai, <i>Ch.</i> aphaí
Hair	lom	_____	<i>Anam.</i> long
Hand	páui	_____	<i>Song.</i> bán, <i>Mar.</i> ván, <i>Ch.</i> apán, <i>Lu.</i> páng
Head	múr	múr,	<i>Co.</i> mari
Horn	shing	hing,	<i>Ak.</i> kung, <i>An.</i> süng
Leaf	parua, páu	_____	<i>Koreng.</i> panú
Moon	chánd	jun,	<i>Si.</i> düan
Mother	má	_____	<i>Kh.</i> <i>An.</i> and <i>Si.</i> me, <i>Bar.</i> amé, <i>Kar.</i> mo, <i>Garó</i> amá, <i>M.</i> imá, <i>Co.</i> omi
	ái (mat : grand-ai mother)	_____	
Mountain	adri	_____	<i>Abor.</i> adí

Salt	lun	lun	
Sky	swarga (heaven)	—	Garó, srigí
Stone	shilá	hil,	Kh. hin, Si. hin
Sun	tapan		Si. tawan
	dahan (burning)		Ak. dahani
Tiger	sing, (properly a lion,)		Kh. seü, Si. süa, Lu. sangkhá, N. T. sakhwii, C. T. sakwí, &c.
Village	gán	gaup	

The writer will no doubt be glad to obtain the Bengáli forms above given.

2. The seven *cases* stated to belong to Assamese Nouns, are the same in number and order with those of Bengáli nouns : and it is by no means (as asserted in the "Comparison, &c.") a *peculiarity* in Assamese that "two pronouns are used for the 2nd person, according as the person addressed is superior or inferior to the speaker." The same obtains in Bengáli also, and is extended to the 3rd person likewise, with a similar terminational change in the verb. Thus—

1st pers :	ámi	mári	Plural	ámrá	mári
2nd inferior	tui	máris		torá	máris
2nd superior	tumi	mára		tomrá	mára
3rd inferior	se	máre		táhára	máre
3rd superior	tini	máren		táñhára	máren.

3. The comparison of adjectives in Bengáli is effected by a similar process to that erroneously stated to be peculiar to the Assamese. Thus *táhá haite* *bara*, greater than that ; *sakal haite* *bara*, greatest of all. All the other grammatical minutiae particularized, equally apply. Also what are termed in the "Comparison, &c." numeral affixes, are of ordinary use in Bengáli ; so that the analogy of the two languages is much closer than supposed in the "Comparison."

II. The fact stated by Captain Gordon, of the various very minute portions of the population employing a variety of dialects often nearly unintelligible to their next neighbours, is most observable. And, the same multiplied diversity having existed among the numerous aboriginal tribes of South America, the inference is just, that dialects are most numerous in the infancy of nations and tribes : while, in proportion as, with the cessation of hereditary feuds and the extension of national intercourse, they become civilized and educated, they approximate also in the use of a common language. Hence it may be confidently expected that, as the blessings of knowledge and refinement, peace, commerce and true religion, are extended among these 27 nations, at present using so many vernacular media, the customs and languages of the smaller tribes will merge into those of the larger, and those of common origin again approach each other and ultimately coalesce. The philanthropist must ardently desire so happy a consummation ; since no one thing, perhaps, so fatally impedes the progress of mankind as those endless subdivisions, of which these multiplied tongues are first a consequence and then a confirmation, ever exciting to jealousies and hostilities of most injurious operation.

It may therefore fairly be a question how far the intelligent missionaries at Sadya and elsewhere, might be justified in endeavouring to anticipate in some measure the work of time. It will scarcely be disputed that a translation of the Scriptures, (unless in very minute portions) for such a tribe, for instance, as that of Champhung, speaking a dialect understood only by thirty or forty families, would be most preposterous. Much may, no doubt, be done to diminish these fractions of language, and the Babel confusion and difficulty they occasion, by the judicious efforts of our political Agents and Missionaries in the ultra-Gangetic and other regions. Much prudence will indeed be required to avoid exciting the hostility of national prejudices, and other impediments to universal improvement.

In many cases, however, little difficulty would be experienced in confining translations, &c. to a more general language, which would ultimately supersede the more confined colloquial idioms. Thus, it is stated that "the majority (of the Champhung families) can speak more or less of Manipuri, or the languages of their more immediate neighbours." Again that "dialects so nearly similar, as are those of the *northern* and *central* Tangkhuls, are generally intelligible to the adult male population on both sides; while the women and children, who rarely leave their homes, find much difficulty in making themselves (mutually) understood." In these and similar cases, the way is plain; to extend education in the common or nearly common language; then, as the want of intellectual and especially of religious supply is felt, it will be sought in the language of the printed books.

III. Intimately connected with this point is that of the *character* to be taught to a people having none of their own. It should seem good, as a general principle, to employ, in such instances, the one used by the dominant neighbouring nation, especially if the languages be of kindred origin; for in this case, that character will be the best adapted to the sounds of the cognate dialect, and may be expected generally to give it a fitter and more correct expression than would any foreign alphabet.

The words in the "Comparison, &c." are given in the *Roman* character, according to the modified system of Sir WILLIAM JONES, to which the term *Romanizing* system has been applied. The writer thinks "they furnish abundant evidence that the Roman character is adequate to express every sound of the human voice, and is well fitted to be the written representative of all languages."

There is a fallacy here, into which most of the thorough-going advocates of the Romanizing system have been betrayed; it is that the modifications applied, according to that system, to the Roman alphabet, are not equally applicable to almost any other alphabet. Now, it is an obvious fact that the Roman letters are, as applied to eastern languages, both redundant and deficient. First, there are no letters corresponding to the ten *aspirated* consonants अ ष, &c.; to the sibilants श and ष; to the liquids ऋ and ॠ; to the nasals ए ऌ ड; to the long vowels अर् अर्, &c. Again, the letters c, f, q,

v, w, x, z, are redundant ; while the two dentals, d and t, must denote, by the aid of the aspirate and a diacritical point, no fewer than eight sounds of that class ! But, while this double defect, of redundancy and insufficiency, opposes the application of the Roman alphabet to the expression of the sounds of the Hindustāni, Assamese, and many other languages in question, the Nāgari and its derivatives are not only complete without excess, but are positively also the most perfect alphabets in the world, the most philosophically conceived and arranged. The only exceptions that can be shewn are, that in the *derivatives* of the Sanskrit, the sound of *v* has been generally merged into *b* or *w*, which occasions a seeming redundancy of *one* letter ; (yet but seeming, because the *form* is also but *one** ;) and that two of the three sibilants are usually confounded in utterance, because of the tenuity of the distinction in their sounds, or rather origin. But if the *abuse* of even a perfect alphabet, one exactly commensurate with the primitive sounds of the language for which it was devised, be a matter of fact, surely that fact is rather an argument *against* the adoption of a very *imperfect* one, as so much *more* liable to originate far greater abuses. To a certain extent, *few* living languages, if any, have ever been exempt from these irregularities ; but all that *can*, it should seem, be done to prevent or remedy them, *is* done when the sounds are, technically, *fixed* sounds ; and, above all, when the written expression of them is exactly commensurate with them when so fixed ; and when, if a *few* irregularities have become obstinate in the usage of any people, *they* also are assigned their fixed limits and fixed expression likewise, as in the use of a diacritical point under the dentals ढ and ढ to mark a provincial utterance not original to the language. Now, as to this last expedient, it should appear to be the only available resource for denoting to the eye the variations from the first sounds of those letters, other than the invention of additional ones not primitive and original to the language ; one necessary effect of which course, would have been the confounding of the etymologies of words essentially the same.

But the fallacy alluded to above is involved in the assertion that “ the Roman character is adequate (as gathered from the tabular columns of ‘ the Comparison, &c.’) to express every sound of the human voice, and is well fitted to be the written representative of all languages.” This assertion involves a negation of such adequacy and fitness to all other characters. Let us see then with what justice. For how are the deficiency and redundancy in the Roman alphabet overcome, on the Romanizing system ? Why 1st, By entirely *discarding* those letters in it whose European sounds are not found in the Indian languages. 2ndly, By the use of *combination* and of *diacritical points*, to enable the Indian variety of sounds to be expressed by an inadequate number of letters having an original utterance *not* Indian. But who does not see that the same operation may be extended to any alphabetic characters whatever ? Of *any* such, we might with equal propriety and equal truth say, that “ it is adequate to express every sound of the human voice, &c.” The *more or less* is altogether, as we said, a

* i. e. in the *derivate* alphabets only ; the *original* forms were quite distinct.—ED.

subsequent and separate consideration. Let not any then be misled by the fallacious mystification of a plain question, in which the sanguine advocates of the Romanizing system have indulged and do yet indulge. It is of course, a subsequent question *what* alphabet may be made applicable to express the sounds of the Indian languages with the *fewest, simplest*, and most effective modifications; but the *primary* one, as to the *capability* of any set of characters to receive an arbitrary assignment to the office of representing any variety of sound whatever, is that which has been, in our judgment, so mischievously mystified. What, in fact, should prevent the process of omission and of diacritical distinction from being applied to any existing alphabet or to any newly invented symbols whatever?

We have, abstractedly considered, no objection to make to the adoption of the Roman alphabet for written communication among a people yet without one of their own. In such a case the only question with us would be one of expediency, to be determined by aptitude, facility, and many other special considerations. But we look upon the attempt to *substitute* the Roman letters for the long established characters, among a people acquainted with the use of written as well as spoken language, as both quixotic and preposterous; quixotic, because the attempt must fail of any considerable measure of success within the lapse of ages, except by measures too arbitrary and unjust to be contemplated by the most zealous advocate of the plan; and preposterous, for the following reasons chiefly—

Because there is a positive, though not to all at first manifest, danger of a progressive corruption of the sounds and confusion of the etymologies of the native languages, by applying to them any other than their own original alphabets. The results of the progress of independent nations, during a course of ages, must not be confounded with those that may be expected under the operation of a high state of mental advancement in a dominant people suddenly and at once imparting their own large knowledge to their conquered subjects. Therefore no conclusion against the present argument can be drawn from the gradual modifications of a nation's *own* alphabet, from age to age; nor from the ultimate disuse, among the European nations, of the German character for the Roman: because these two sets of symbols were substantially the same in *form*, essentially the same in *sound*. There is consequently no analogy between the gradual improvement of the European alphabets, in appearance and facility of writing, &c. and the now contemplated entire substitution of a foreign alphabet, altogether exotic both in sound and figure, for the native Indian characters. In the former case, there was no danger whatever to be apprehended of confounding letters of the same organ, to the annihilation of all clear traces of the etymologies of words of various origin, or of the gradual corruption of the phonic powers of the letters; in the latter there is the greatest. Thus *tat*, that, and *taṭ* a shore, differ, in *Roman* character, but by the diacritical point under the final *t* of the latter word. Now all who are versed in this subject well know the extreme difficulty, and often almost inextricable confusion, occasioned by errors and omissions in diacritical marks, in the writing

of languages to which they are *original*; and if this be the consequence of such a system to them to whom such languages are vernacular, how much more extensively is its experience to be apprehended by those who come, as foreigners, to the study of languages whose system of alphabetic sounds is so widely different as are those of India from those of Europe? Europeans as it is, with all the check upon a vicious pronunciation secured by the *distinct* forms of the native characters, too often fail in acquiring their proper sounds, and in consequence are but too extensively unintelligible in their vocal communications. How often has this been felt and complained of in civil functionaries and, where it is most injurious in its results, in Missionaries of the blessed Gospel! The writer has known numerous cases in which the greatest zeal, and even large positive attainments, have been greatly neutralised by a confused, inaccurate and indistinct pronunciation. The adult organs have, in fact, acquired a *set*, so to speak, which does not readily admit of the enunciation of sounds various from those acquired in childhood. Indeed, not only a facility of accommodating the organs of pronunciation to new positions, &c. but a fine and accurate ear too, is necessary, in the first instance, to *distinguish* the minuter variations of sound among letters of the same class: some, entirely new, are seldom perhaps thoroughly acquired by the best scholars. Now it is manifest that this difficulty, and the concomitant danger of confounding the most important differences in letters and words, would be immeasurably increased were the helps and guards of the native characters removed and our *own*, however systematized, introduced.

Nor would the evil be confined to foreigners. For, besides that increasing intercourse with these would naturally and even necessarily tend, of itself, to *familiarize* the natives to much vocal and written corruption of their languages, were *they* also to adopt the Romanizing system, they would themselves be in no small danger of extending that corruption. Thus the words তাত, *that*, and তে, a *shore*, in distinct native characters cannot be mistaken; but their equivalents in Roman letters, *tat* and *taṭ* differ only in a point. How easily might the omission alone of that point create confusion and obscurity! But this is not all; for as, in English, the letter *t* has never the sound of ত but of তে only, in learning that language a native of India has first to encounter the difficulty of altogether discarding, wherever he meets the letter *t*, the dental sound of ত, (immeasurably more frequent in his own language than that of তে which is the *English t*,) and is then incessantly exposed to the hazard of corrupting the sound either of the English *t* or of his native letter ত, and of settling down into a slovenly uniformity of dental enunciation in one or in both languages, to the ultimate confusion of words essentially different; thus, at once, destroying the etymologies and obscuring the sense of the words he employs. So of the vowels also; *man*, in English, he must pronounce nearly as মান in Bengali; in reading his own tongue *Romanized*, he must pronounce the same combination as মান, of which it is the equivalent. It is replied, I know, that Europeans of all nations experience no such difficulty, and are exposed to no such

hazard of a mispronunciation of the *same* letters applied in different combinations to varying utterances. But, be it remembered, that the European has acquired his vernacular alphabetic sounds in infancy and without effort; by effort must he learn, in after life, to give other sounds, say the French, &c. to the same letters. There is *no* danger whatever of his corrupting those proper to his native tongue. There is to him only the difficulty of fully acquiring and correctly applying the acquired foreign enunciation. But to a native of India, the Roman alphabet is originally unknown, as the expression of any system of sounds. He has therefore to encounter the prodigious difficulty of applying *foreign* letters on *two* distinct vocal arrangements; first to his own tongue, to which it is inadequate, and then to a European one. Nor, let this difficulty be thought exaggerated. For in eastern languages *vowels* at least are strictly *invariable*; the same letter expressing ever but one sound; and, with very slight exceptions, this is equally true of the consonants: *but*, in English, and *but* in Bengali, are severally, an adversative conjunction and a noun meaning a species of corn; and the same vowel *u* is equivalent to the native ঊ and ঋ both, vowels never confusable or interchangeable!

To all which must be added the conclusive consideration, that were the Romanizing innovation, by any chance, to succeed in throwing out of use the *native* character among European students of the native languages, and among any considerable number of the youth of the country now educating in our Schools and Colleges, one of the most singular and fatal consequences of such an unparalleled anomaly in educational philosophy, would be the setting aside, at one fell swoop, of the whole indigenous literature of the land, the entire writings of its purest and most valuable original authors, and the reduction of the *native* library of the rising literati and the European student, to a few miserable volumes of *Romanized* exotics, a Primer or two, the Pilgrim's Progress, and one or more similar specimens of a foreign idiom in a foreign dress! How monstrous a consummation!

I might indefinitely enlarge, but must yield to the restraint imposed by the limits to which the small space afforded in a periodical confines me. Enough has been stated I should hope to shew—

1st. That it is a manifest *fallacy* to represent the Roman alphabet, as modified in the Romanizing system, as a fitter expression than any other alphabet, under the same plan of modification, of the sounds of eastern or of any other languages.

2nd. That the attempt, futile as it really is, to substitute the Roman for the native alphabets, were it actually to succeed, must be pregnant with the most mischievous results to the philology of the native languages; both as to the etymological distinctness of words, (on which the clear perception of their sense and the perspicuity or obscurity of construction so much depend) and as to the purity of native pronunciation.

I will only in conclusion observe, that, as applied to the *expression in European books, and for the information of Europeans, of native words and*

sentential quotations, the Romanized system, originally fixed by that eminent scholar Sir W. JONES, and now but very slightly modified indeed, is immeasurably more accurate, complete and philosophical than any other that has been put forth by English Philologists. All who take an interest in oriental literature must heartily rejoice in the fresh impulse that has been latterly given to it; an impulse which bids fair, ultimately and at no distant period, to put out of use, for ever, those other, at once crude and tasteless, systems, equally unphilosophical to the mind and uninviting to the eye, which *have* been applied by some learned but injudicious scholars. This alone were result enough, amply to reward those active and philanthropic individuals who have stirred up the present question. Would they but rest here, they would be justly esteemed benefactors; beyond this their labours are either mischievous, or absurd, or both at once; of which, besides the philological arguments above given, may be adduced the fact, that while occupied with more than quixotic hopes, excitement, and confinement of view, in this vain attempt at more than an Herculean task, they are dividing the warmest friends of native education and general improvement: they do positively retard the period of the regeneration of India; a consummation that can only be brought about by *united exertions*; by "a long pull, a strong pull, and a pull altogether," of that chain of instrumental truth which is to pull down for ever the monstrous edifice of the superstitions of ages.

Note.—Did we not consider this question as long since set at rest, we might easily second our author with other arguments against the adaptability of the Roman alphabet to *take the place* of the oriental alphabets either of Arabia or India; although it is no doubt possible to contrive that it shall, by modifications and restrictions, represent any given number of sounds. The real *merit* of the European alphabet, for writing and for printing consists in its *fewness* of symbols:—multiply these by diacritical marks, and it is put on a par with Eastern alphabets in one source of perplexity, while it is behind them greatly in the distinction of letters *inter se*. Any one engaged in printing knows the exceeding difficulty of setting up and of sorting letters of the same name merely affected by a minute dot; and hardly a page of romanized *writing* can be produced in print properly accented. Sir W. JONES's system of romanization even with the TREVELYAN modifications, is still far from being perfect, however sufficient, as we have always maintained, for Europeans and *sentential quotations*. Some of the continental systems, as that of CHEZY, founded on the principle of representing single letters always by single letters, has a great advantage over it in the transcription of poetry in particular, where it seems unprosodial to give a short quantity to a vowel preceding such double letters as *bh, dh, chh*, while *mh, lh*, require a long one. The hard palatal is, we think, better represented by the *c* alone, that is, the Italian *c*; especially as both the hard and soft sound of this letter are discarded in the present romanized scale. What can look more uncouth than *achchhā* (by CHEZY *acc'á*) unless, indeed, it be the more ancient continental orthography *atchchhā*, which is qualified to express nothing short of a typographed sneeze!—ED.

VIII.—On the difference of level in Indian Coal fields, and the causes to which this may be ascribed. By J. McCLELLAND Esq. Secretary to the Committee for investigating the Coal and Mineral resources of India.

[Extracted with permission from the Committee's Reports now under publication.]

Before proceeding to notice the information which has been published or reported to government regarding the various coal fields, it will be desirable to offer a few observations on the geological features of that portion of India in which they occur, more especially beyond the Ganges.

The face of the country rises gradually as we cross the plains on the western side of the *Hoogley* towards the range of hills, at the base of which the coal field of *Burdwan* is situated; this is proved by the following fact noticed by the late Mr. JONES, namely, that at *Omptah*, twenty-two miles due west of *Calcutta*, and the same distance from the sea as that city, the tides in the *Damuda* derived from the estuary of the *Hoogley* rise but ten inches during the springs of June, ebbing and flowing only half an hour*. In *Calcutta* on the other hand there is a difference of seventeen feet between high and low water during the same springs†, from which we may perhaps infer, that the plain in this direction ascends nine inches per mile for the distance of twenty-two miles from the *Hoogley*; beyond this, the surface is known to rise more rapidly throughout the extent of sixty or seventy miles to the foot of the hills, which is the cause of those violent floods that render the navigation of the *Damuda* so difficult‡.

* We should think the facts here noted prove rather the two places to be on the same level. As far as the tide reaches, the average of high and low water will be very nearly the level of the sea, unless there is a considerable flow of water from above, which is less the case in the *Damuda* than in the *Hoogley*. The lift depends on the body of water, depth, and configuration of the channel, and the *Damuda* only gets an offset from the *Hoogley* tidal supply. The height of the surface of the land may be safely measured from the average of high and low water mark. See a paper on this subject by Captain T. PRINSEP, Gl. Sci. Vol. II.—ED.

† See KYD'S Tables, Asiatic Res. 1829.

‡ Mr. JONES states that the *Damuda* river is open from the middle of June to the end of September for boats of 300 maunds burden, from *Omptah* to the situation at which the coal is raised, and that each boat is capable during this period of passing five times between these situations. It is necessary, when from a slight cessation of rain the river is perceived to fall, to haul the boat on the highest practicable ground, and there await the succeeding flood, which sets in with so much impetuosity as to overwhelm whatever may happen to be in its course.

On the eastern side of *Calcutta* on the contrary, there is a depression, though probably of less amount, extending gradually to that portion of the *Sunderbunds* marked 'morass,' in ARROWSMITH'S map, a little on the west of *Culna*. This lowest situation perhaps of the *Sunderbunds*, is situated midway between the *Tiperah* hills on the east, and those hills the continuation of which on the western side of the *Hoogley*, contains the *Burdwan* coal field; the distance across the alluvium on either side being about 150 miles, making the breadth of the united delta of the *Ganges* and *Brahmaputra*, at this situation 300 miles.

If from the morass, we proceed two and a half degrees due north, we find the breadth of the great delta contracted between the *Garrow* and *Rajmahl hills* to 150 miles, from which situation the alluvium again expands into the plains of its respective rivers, extending north-west and north-east respectively, and leaving an obtuse angle formed by the *Sikkim* and *Bhotan* mountains, pointing toward the great delta, and forming with the *Rajmahl* and *Garrow* mountains three points of a nearly equilateral triangle, which constitutes the nearest local connexion of the three distinct systems of Indian mountains; and at each of the three situations, viz. *Rajmahl*, *Chilmary*, and the *Teesa* river coal has been found.

It would be hazardous to draw any conclusion from this interesting fact, until we are better acquainted with the nature and relative position of the strata in each locality. Should the coal of the three situations prove to be the same formation, borings in that case conducted in various intermediate points in *Purnea* and *Dinagapore*, might detect the coal measures buried beneath this portion of the delta; (vide a. A. Fig. 1) but at present our data are too vague to justify the expense of such a mode of inquiry in this quarter. It would rather seem that the intervening coal measures were upheaved with those of the adjacent mountains, and subsequently overthrown by the *Ganges* and *Brahmaputra*, or by other causes hereafter to be considered.

Although we have at *Chirra Punji*, a bed of coal raised on an insulated summit 4300 feet above the level of the sea, the rocks by which it is accompanied are identical in their nature with those that are found bearing a similar relative position to other beds of coal of the same formation, whether above or below the level of the sea. The annexed figure will render these observations better understood.

- a a a a* Coal. *b b* Great sandstone forming the base of the coal measures.
e e e e Igneous rocks. *g* Basaltic quartzose rocks, reposing on the greenstone (*i*)
i Greenstone. *h* Granular slaty quartz, or metamorphosed sandstone.
l Nummulite limestone. *m* Slate clay.
n New sandstone, containing in the south side of Assam fragments of coral and fossil trees.



The section of the *Kásya* mountains here represented is not ideal, although the horizontal distances are contracted for convenience.

With regard to the tertiary beach *L*, it is a settled point in such cases that it is the land and not the sea that has undergone an alteration of level. The difference between the fossil beach and the present sea, is consequently the quantity which these mountains have increased in height since the tertiary period, indicated by the character of the shells of which the fossil beach is constituted, thus accounting at once for the principal difference of level between the coal at *Chirra* and that of *Burdwan* on the opposite side of the delta. The bursting of a sub-marine volcano between the points *B, B*, from beneath a secondary basin *A*, composed of the coal measures, would necessarily if on a scale of sufficient magnitude uplift the intermediate portion of the latter, separating the strata *l, l, l, l*, which were continuous before the elevatory movements commenced. This will also account for the presence of coal at the base, as well as on the summit of the mountain at *Chirra**. The great mass of igneous rocks *e, e, e, e*, which appear to have been chiefly instrumental in effecting the upheavement of the coal measures, is sienite; but at *i*, situated on the southern side of the *Bogapany* river, greenstone.

* The existence of a sub-marine basin of a depth which according to these views must have been equal to the entire height of the mountains, may appear to be incompatible with the depth to be assigned to the sea which would appear to have covered Bengal during the tertiary period. The existence of an unfathomable abyss called the swatch of no ground, close to the mouths of the Ganges, and surrounded by shoal water where the deposit of silt might be supposed rapidly to remove such a remarkable feature, leaves little difficulty in conceiving the great depth to which marine valleys may descend. The swatch is about 5 miles east of *Lacom's Channel*: it is fifty miles long, and thirty broad, and within a mile or two of sands which are left bare at low water; 130 fathoms of line have been tried without effect, and this, within so inconsiderable a distance from the northern side of the swatch, where soundings indicate only 7 fathoms, as to leave little doubt of this sub-marine valley presenting as precipitous declivities as we are in the habit of witnessing from the loftiest table-lands. For the soundings of this basin see HORSBURGH'S Map of the Bay of Bengal.

is seen protruding from beneath the lower strata of sandstone here represented by a coarse conglomerate of boulders, imbedded in some occasions in a matrix of felspar, as in the valley of the *Calapany**. The greenstone *i*, forms the whole declivity on the south side of the *Bogapany*, down to the bed of the torrent which is formed of a glassy basalt, apparently nothing more than altered masses of that portion of the sandstone formation which has been here entirely overthrown by the causes just adverted to†. Ascending from the torrent along the precipitous face of the mountain to *Muflong*, the metamorphosed rock gradually loses its columnar structure, and assumes the character of granular slaty quartz. In the vicinity of *Muflong*, this last form of rock, which may be traced by several gradations into ordinary sandstone, rests on sienite in highly inclined masses. Sienite forms some of the loftiest summits in this situation, but appears to pass, on declivities, into a rock formed chiefly of felspar in a fine granular crystalline state, with a little quartz‡; and enclosing granitic masses which undergo concentric decay, and occasionally beds of mica, and sometimes of quartz much comminuted. This constitutes the principal formation over which the road extends from *Mairang* into the valley of *Assam*. Somewhere on either side of the lower portion of this declivity, coal measures have been detected the same as on the *Bengal* face of the mountains, but accompanied with newer sandstones containing salt springs in addition to fossil trees and detached fragments of coal. Limestone, agreeing in mineral characters and probably in fossil contents with that of *Chirra*, also occurs in this side of the mountains; but the relative position of the beds, as well as all other important geological features here remain unexplored§.

* This is a small but precipitous river valley, met with in the table-land between the *Serarim* and the *Bogapany*.

† It is always satisfactory on such occasions to find the views of different observers agree in ever so limited a degree: I may therefore remark that Sir EDWARD RYAN and Mr. CRACROFT, who on distinct occasions crossed this portion of the *Kásya* mountains prior to the visit of the Assam deputation, also found rocks which they denominated basaltic. No 21 in Sir EDWARD'S collection of specimens presented to the Asiatic Society's museum is named 'basaltic quartz' from the bed of the *Bogapany*; and is the same as the glassy basalt above-mentioned. Mr. CRACROFT'S collection of specimens from between *Muflong* and *Serarim* also contains a 'basalt' as well as 'a coarse quartz sandstone'—(Vide Journal of the Asiatic Soc. Vol. III. 296) which is the metamorphosed sandstone here spoken of.

‡ Described in my geological catalogue as primary sandstone.

§ Figs. 25, 20, 21, and 15, Plate 2, were found in a small quantity of the *Assam* limestone which had been brought to *Gowahatti* for the purpose of making lime: all these but 15 have been found in the *Chirra* limestone also.

The insulated situation of the coal measures at *Chirra Punji* affords an excellent opportunity for their examination, owing to the great extent of surface which is free from soil and alluvium, so that the geologist has no obstacle to encounter but the dense vegetation peculiar to the climate.

The great sandstone composing here as elsewhere the base of the coal measures, forms the lofty front of the mountains facing the plains. The lower beds consist of a coarse conglomerate, as already stated, represented at *i*, in the preceding section, resting on greenstone after the manner of similar conglomerates in nearly all countries in which their fundamental rocks have been observed*. When we consider that this is not merely the case with the sandstone of the *Kásya* mountains, but that the whole series of sandstones throughout Central India rest on the flanks of ranges of sienite, greenstone, and basalt, we cannot apply more appropriate language in elucidation of this general feature in our geology, extending as it does over an area of 1800 geographical miles in length, and 300 in breadth, than the following remarks of DE LA BECHE:—"As we can scarcely conceive such general and simultaneous movements in the interior strata immediately preceding the first deposit of the red sandstone series, that every point on which it reposes was convulsed and threw off fragments of rocks at the same moment; we should rather look to certain foci of disturbance for the dispersion of fragments, or the sudden elevation of lines of strata, sometimes perhaps producing ranges of mountains in accordance with the views of M. ELIE DE BEAUMONT." Had this idea resulted from observations in India, rather than in Europe, it could not have been more appropriate, or formed so as to convey a more accurate notion of the nature and connexions of our red conglomerates.

Ascending through the series of beds of this rock in the *Kásya* mountains, we find the coarser strata occasionally reappear, succeeded again by the normal beds which are fine, durable, and grey colored.

In some places, but especially when approaching the upper third of the series, the colors become variegated, and ultimately the whole, or nearly so, assume a brick red color. The higher strata form a barren table-land with lengthy sloping summits extending to the distance of ten miles towards the interior of the mountains.

* Speaking of the porphyry on which the red conglomerates of Devonshire rest, DE LA BECHE observes (Manual Geol. 388).—"When however we extend our observations, we find that our conglomerates are very characteristic of deposits of the same age in other parts of Britain, France, and Germany, and they most frequently though not always rest on disturbed strata."

The limestone and coal about to be described, repose in an elevated position on either side of the adjoining summits; whether the rocks of which these last are composed, occupy a superior geognostic position with regard to the coal or not, is somewhat doubtful; but as far as it is safe to determine from inquiries of a partial nature, we may consider the sandstone from the base of the mountains to the higher peaks along their flanks as an uninterrupted series of beds, and consequently, that the coal is a newer rock than the sandstone composing adjacent summits.

In the sandstone upon which the coal and limestone immediately rest at *Chirra*, a bed of boring shells, figs. 8, 9, 10, plate VII. occur composing a considerable portion of the rock in certain places. The shells were of the size and form of the *Teredo navalis*, but they are mineralized so unfavorably as to render it doubtful to what genus they really belonged*.

It is here worthy of remark that the old red sandstone at the base of the coal measures at *Caithness*, and other parts of Britain contains fishes, none of which appear in the superincumbent beds, while at *Chirra* we have a sandstone bearing the character of the old red, and like it reposing on igneous rocks, and supporting beds of limestone and coal; but instead of fishes abounding in the peculiar boring shells just mentioned, not one of which could be found in the superimposed rock, nor could one of the numerous shells of the latter be found in the subjacent rock, thus indicating both in Europe and India, that a sufficient

* IN DR. BUCKLAND'S paper on the fossils procured in *Ava* by Mr. CRAWFORD, Geol. Trans. 2nd series, vol. II. p. 387, teredines are mentioned as having been found in blocks of wood in that kingdom and of the same species as those found in London clay. Mr. WISE of *Dacca* has recently found fossil trees in *Camilla*, that remarkable tract of table-land referred to in the first paragraph of the author's report on the physical condition of the *Assam* tea plant. (Transactions of the Agricultural Society of India, vol. IV. p. 1.) Two specimens of these trees have been brought to Calcutta by H. M. Low, Esq., one apparently calcareous, the other is siliceous, yet both were found together in the same place, so that it is to be supposed they were drifted from distinct situations. One of these fossils had been eaten by *termes* and the other perforated by a kind of *teredo*, the holes of which agree in every respect with those formed in recent trees in the *Sunderbunds* by the *teredo navalis*; the trees were dicotyledinous. If they were actually found on the table-land alluded to, the fact will lead to some highly interesting inferences, but whether or not, they serve to form an interesting local link between the fossils of the *Chirra Punji* sandstone, and the living teredo in the Bay of Bengal. Mr. Low has kindly undertaken to procure more information from Mr. WISE regarding the history of the fossil woods in question, which are in the meantime transferred to my friend Dr. CANTOR.

interval of time had elapsed between the period at which the formation of the conglomerates was finished, and that at which the production of the limestone commenced, to allow of the disappearance from the seas of one class of animals, and the introduction of another. The surface of this great formation for two-thirds of the entire height of the *Kásya* mountains in this situation, is covered with a stratum of marine shells which lie immediately under the soil, and in places these remains are accumulated in extensive deposits of the shingle of an ancient coast represented at *L*, in the preceding figure.

On the summits which intervene between the coal at *Chirra*, and that of *Serarím* above adverted to, the sandstone is chiefly of a brick red color, variegated in places with white. Imbedded in the structure of this rock, the fragment of a fruit or lomentum of a leguminous plant belonging to the tribe mimosea, was found*. This fossil, figs. 4, 5, 6, 7, plate I., like the remains of the teredinous animals already noticed, (though its form is better preserved) is converted into sandstone in no way different from the matrix, except that it was separated from it by a want of cohesion between the form and the impression. It is probable from this condition of the fossil that it may have lived at a time when the rock in which it was imbedded was forming, and been washed into waters and deposited with their sediment. Near it was found a thorny stem, fig. 3, plate I., such as the plant to which the fruit belonged most probably possessed, especially as the thorny species of mimosæ, producing fruit of such a size, are the most numerous of the tribe. The mimosæ form a very general feature of the vegetation of the plains, but are rarely if ever seen on mountain summits at such an elevation as the rock in which these fragments were found. The inference consequently tends to support the indications of upheavement afforded by the marine remains so extensively distributed over the acclivities of these mountains, as well as the doctrine of LYELL as to the influence of vicissitudes in physical geography, on the distribution and existence of species. It also leads us to infer, that one feature at least of the existing vegetation of India, has survived those revolutions which have obliterated the existence of tropical forms in the present temperate regions of the earth.

Reposing on the teredinite sandstone near *Chirra*, a detached accumulation of limestone with alternating beds of sandstone, coal, and shale, disposed in horizontal strata, form a precipice about a hundred feet high from the base. Coal, to a thickness of fifteen feet in places occupies a

* We are indebted to the botanical acquirements of my friend and fellow-traveller WILLIAM GRIFFITH, Esq. for a right knowledge of the nature of this fossil.

middle position in these strata. A bed of loose, coarse and sharp sand, five feet deep, forms the roof of the coal, and a layer of soft sandstone, about two feet in thickness, rests directly under the soil upon a bed of clay about twenty feet deep. The clay holds an intermediate position between the roof of the coal and the superincumbent sandstone; it is of yellow color, but dark in some places, and intersected horizontally with thin layers of gravel, coal, and an iron pyrites of little value, and in small quantity. From their softness these beds are easily, though not uniformly, acted upon by surface water, which peculiarity may have given rise to that waved appearance observed by Mr. JONES and Captain SAGE in the *Burdwan* and *Palamow* coal fields.

Following the section from the coal downwards, we meet with an earthy limestone, which, though naturally dark, becomes mealy and whitish on the surface by exposure: it is perhaps the magnesian limestone of the coal measures. This bed is about four feet in thickness, and contains nests of coal, with some traces of shells; a layer of sandstone an inch in thickness divides this from a bed of ordinary compact limestone twenty feet in thickness, containing few if any shells;—an interesting circumstance when compared with the fact of the absence of fossils in limestones of similar character in Central India: a more compact and crystalline bed than the last, abounding in those shells represented in plate 2, then occurs. This is separated from the great sandstone, by a fine calcareous grit stone eight feet in thickness, in which fig. 23, plate VIII. was the only fossil found.

Nummulite limestone (*k*, fig. 1) was first brought to light at the foot of the *Kásya* mountains by Mr. COLEBROOKE in his paper on Mr. SCOTT's notes and specimens, which were forwarded to the Geological Society in 1824*; but the *Chirra Punji* bed of shell limestone here noticed was first observed in 1832 by Mr. CRACROFT†, Mr. SCOTT may have previously found occasional shells in the same rock in the *Kásya* as well as in the *Garrow* mountains‡. It does not however appear that any chronological distinction has been established between the different limestones in this quarter, although the *Chirra* rock is distinguished as a formation from the nummulite limestone, as well by means of its fossils, as by the beds with which it is associated.

The nummulite limestone of *Terriaghát*, where it composes that portion of the *Laour* hills situated at the base of the *Kásya* mountains, is a

* Geological Transactions, vol. I. 2nd series, 132.

† Journal of the Asiatic Society, vol. I. 252.

‡ Geological Transactions, vol. I. 2nd series, 132.

compact blue rock alternating in single strata with a coarse earthy oolite of a calcareous nature*. These appear to rest (as well as could be determined during a cursory examination while passing) on a slate clay composed of argillaceous blue clay with slaty layers of ferruginous matter and sandstone. The compact beds abound in nummulites, and in fragments of the same rock which had been quarried somewhere in this vicinity and conveyed to *Chattak* for the purpose of making lime, a *turbinolopsis ocracea* was found†. Now although we cannot as yet contend for the universal and contemporaneous distribution either of the same organic species or geological formations, yet as the chalk of Europe is represented in several extensive tracts of that continent by rocks which are very unlike, and especially in the *Morea*, by a compact nummulite limestone, and in the South of France by an oolite containing nummulites, there is no reason why, in the present state of our knowledge we should not refer our compact nummulite limestone, together with the oolite associated with it, to the cretaceous group. See LYELL, 4th ed. vol. IV. 287-8, where the observations of MM. BOBLAYE and VIRLET, are referred to in support of the equivalent distribution of chalk and nummulite limestone in Europe.

In the *Chirra Punji* coal no vegetable impressions have been found; but slight opportunities have been hitherto afforded of examining the adjoining shales in which they are chiefly to be expected. I found in the bed of coal at *Serarim*, however, which appears to be the same formation, a large phytolithus, or stem, characteristic also of several of the independent coal formations of Europe and America; a similar fossil appears to have been also found by VOYSEY, in the coal of Central

* Although 40 geographical miles distant from *Silhet*, it is named in Mr. COLEBROOKE'S paper, *Silhet* limestone; but as other limestones may be found nearer *Silhet*, the necessity of being more definite in our allusions to localities in India is obvious. In the following volume of the same Transactions, this rock (supposing it to be the *Silhet* limestone), is said to be white, and also to contain in the *Garrow* mountains vertebræ of a fish; but unless we presume that the Rev. Dr. BUCKLAND, the eminent author of the paper in question, identified these in Mr. SCOTT'S specimens, and that they were overlooked by Messrs. CLIFT and WEBSTER who examined them for COLEBROOKE'S paper, we must attribute the statement to a similar vague indication of localities as that above referred to; as we look in vain for an instance of Mr. SCOTT having found vertebræ of fishes in the nummulite limestone, although such were found by him in the sands and clays of the *Caribari* hills, as appears from the list of fossils in COLEBROOKE'S paper.

† A madreporite represented by a single star, the radii of which, as well as the form of the fossil, correspond with *T. ocracea*, represented in the Suppl. vol. GRIFF. Anim. King.

India* ; thus, the identity of the different beds referred to, is so far confirmed.

With the exception just mentioned, as well as the impressions of lycopodiums and ferns in the shales connected with *Burdwan* coal, organic remains have been hitherto little noticed in Indian coals ; but when we avail ourselves of improved means of observation we find this branch of the subject no less interesting here, than it had been rendered in Europe†.

The microscopic discoveries of the organic tissues of plants recently made by the Rev. Mr. READE in the ashes of English coal, have induced J. W. GRANT, Esq. of Calcutta to repeat those interesting observations with complete success. The ashes of *Serarim* coal, as well as those afforded by several kinds from the neighbourhood of *Silhet*, and one variety of the *Burdwan* coal, display most distinct signs of organic textures ; so much so, that some of the coals of very different localities may be identified by their ashes as having been formed from similar plants under similar circumstances—for instance, one variety of coal from the foot of the hills near *Silhet*, with another from a lofty bed on the summit of the *Kásya* mountains.

With regard to the nature of the rocks in Central India associated with coal, as far as their details have been made out, there can be little question regarding their identity with the coal measures of *Chirra*. FRANKLIN, after an examination of several districts, considered the sandstones of the *Nerbudda* to represent the new red conglomerate of Europe. The Rev. Mr. EVEREST on the other hand, has assigned excellent reasons for supposing those rocks to bear a closer alliance to the old red sandstone, and his views are strengthened, if not confirmed, by more recent and extended observations in a quarter better calculated to afford satisfactory results. The limestone of the same districts were considered by Captain FRANKLIN, and other writers of the same period with no better reason, to represent the lias ; but Mr. EVEREST justly

* Res. Phys. Class. Asiat. Soc. 1892.—13.

† A gentleman recently engaged in a survey of one of our coal fields, exhibited a large reed which seemed to be an ordinary species of *saccharum*, at one of the late scientific soirees at Government House, as the plant from which coal is derived. It is however stated on the authority of LINDLEY and HUTTON, in their *Fossil Flora*, that no glumaceous plant has been found in a fossil state, though grasses now form a general feature of the vegetation of all countries. Of 260 species of plants discovered in coal formations, 20 are cryptogamous, the remainder afford no instance of any reed, notwithstanding some doubtful appearances to the contrary, and not a single vegetable impression in the coal beds has been identified with any plant now growing on the earth.

observed, that as no fossils have been found in it, the chances are that it belongs to an earlier date*. Numerous limestones are found so much alike in appearance, that it would be quite impossible to draw a line of distinction between them except by means either of their fossil contents, or their relative position to other rocks whose nature may be better understood; but where, as in the present case, such information is also deficient, we must still hesitate to adopt any decided views regarding them.

It may here be desirable to offer a few observations on the changes of levels which have taken place in our various coal fields. Why one should now occupy the summit of a mountain at an elevation of 4300 feet†, and another remain scarcely emerged above the sea‡, is a question that almost suggests itself in this place; and as the nature of coal has led to the conclusion that it must at least have been formed beneath estuaries, if not at greater depths from the surface§, the causes that have produced its present diversified position cannot fail to excite the deepest interest in our minds. In the course of the inquiry we shall find that there is perhaps no portion of the earth to which the doctrine of existing causes can be applied with more effect in accounting for the physical changes that have taken place, than India.

An inspection of the annexed map Pl. VI. will show the probability of the disturbing forces having been directed in certain lines, one of which extending from A, to B, may be named the secondary volcanic band, from its principal energies appearing to have been exerted during the secondary period. VOYSEY, after a careful examination of several districts in Central India, embraced by this belt observes, "I have had too many proofs of the intrusion of trap rocks in this district" (tablelands west of *Nagpore*) "amongst the gneiss to allow me to doubt of their volcanic origin||." Dr. HARDY, Captains FRANKLIN, JENKINS, and COULTHARD in their several communications to the Asiatic Society, have in certain instances expressed similar views regarding several phenomena presented to their notice in the course of their inquiries in Central India. The appearance of lines here observed in the distribution of trap rocks, was formerly supposed to be irreconcilable to the pro-

* Gleanings of Science, vol. III. page 207.

† At *Chirra Punji*.

‡ At *Arracan*.

§ Dr. THOMSON considers coal to have been formed by the slow combustion of vegetable matters under great pressure and consequently at considerable depth beneath the surface—vide outlines *Minerology and Geology 1836*: others refer its origin merely to the accumulation of vegetable matters in estuaries.

|| *As. Res.* 1829. p. 194.

miscuous nature of volcanic action, and may have tended materially to embarrass the views of geologists in districts not calculated to afford any very striking results.

If we refer to the volcanic belt of the *Molucca* and *Sunda* islands, we shall find evidence of as perfect a lineal tendency in the direction of its active energies as that which the extinct band affords, of having, within the secondary period, extended across the centre of India in a line parallel with the equator from the gulf of *Combay* to the *Himálaya*.

The active vents of the *Molucca* band have been extended by VON BUCH from *Sumatra* to *Barren Island*, from which point the train may be carried in the same line through the islands of *Narcandom* and *Rambree*, to the coast of *Arracan* and *Chittagong*, as represented on the annexed map; at this situation the two zones intersect each other, so as to form their united focus in the *Kásya* mountains where the energies of both would seem to have been most exerted, the elevatory movements having commenced in the secondary, and continued throughout the tertiary period.

Although oscillations of the surface, and perhaps occasional eruptions may have taken place at all times, attended by the subsidence of one tract, and the upheavement of another, yet the principal energy of the *Vindhya** volcanic belt from A to B, appears as already stated to have been chiefly confined to the secondary period.

A chain of sienite passing on the one hand into granitic rocks, chiefly composed of felspar, and on the other into greenstone and basalt, extends across this portion of the continent. On the flanks of this chain the coal measures repose, rarely forming a series of beds so extensive as observed in England, except perhaps in the *Caribari* hills and along the southern boundary of *Assam*. A sandstone equivalent to the old red, rests immediately on the disturbed strata; with the sandstone, beds of coal and shale, as well as limestone occur: along the flanks of the chain thermal springs are situated, one of these has been recently found by Mr. BETTS in the *Damuda* river near the foot of the *Pachite* hills†. In the *Nerbudda* valley two have also been brought to notice by Dr. SPILSBURY; in *Curruckpore* district several hot springs are mention-

* Such is the geographical name of the range which extends from the *Gulf of Cambay* to the *Ganges* at *Bágalpore*, from which it would seem from certain indications (24.49) to have been extended by a series, obliterated ridges across the *Delta* to the *Garrow* mountains, the leading geological features of the older rocks being, as far as they are as yet determined, the same on both sides (41.)

† Journ. As. Soc. 1832-36.

ed by Mr. JONES, in addition to the well known spring at *Mongir*. In *Assam*, on the opposite side of the delta they are also common in the same line in several situations along the foot of the *N g u* mountains, thus confirming other indications that have been adduced of the volcanic agency of this extensive band throughout its extent on both sides of the Ganges.

The other band now to be noticed is a continuation of that which has been described by VON BUCH, as belonging to the volcanic train of the *Moluccas*; but it has been extended no farther by him in the direction in which we are now to trace it, than *Barren Island* in $12^{\circ} 19' N.$ lat. in the Bay of Bengal*.

The island of *Narcandam* situated in $13^{\circ} 22' N.$ lat. is a volcanic cone raised to the height of seven or eight hundred feet. The annexed outline, reduced from a sketch made by WILLIAM GRIFFITH, Esq., while



passing within half a mile of the shore, shews the figure of the cone; the upper part of which is quite naked, presenting lines such as were doubtlessly formed by lava currents descending from the crater to the base, which last is covered with vegetation. No soundings are to be found at the distance of half a mile from the shore.

The next volcanic islands to be observed, are those which form a small archipelago on the *Arracan* coast. The largest of these is *Rambree*, described in the fourth volume of the *Asiatic Journal* by the late Lieut. FOLEY. It is situated close to the low marshy coast of *Arracan*, and is formed of ranges of mountains extending in the direction of north-northwest, varying in height from five to fifteen hundred feet; one peak named *Jeeka*, is raised to an elevation of 3000 feet above the sea. The plains from which the ridges ascend slope down to the sea with the occasional interruption of low ridges containing basin-like cavities large enough for the cultivation of rice. The highest portions of the plain are composed of shingle, the same as the recent breach, a circumstance which may be observed on removing the soil.

Earthy cones covered merely by a green sward, and situated generally in marshy grounds are ranged along the shores of *Rambree* as well as the adjoining islands and coast of *Arracan*: their naked appearance,

* See Plate III. LYELL's Principles Geol. vol. XI. 4th ed.

contrasted with the dense marshy forests from which they ascend, is said to have a singular effect, heightened by a few scattered plants of the *Tamarix indica*, elsewhere found only in sandy deltas and islands along the course of the great rivers, growing on their sides; on the summit of each cone a spring of muddy water is found, through which gas escapes in bubbles, a peculiarity which has procured for them the name of mud volcanoes. These cones, although they excited no interest when first described by Lieut. FOLEY*, are characteristics of the coasts of *Chili* and *Calabria*, and are well known to result from some of the most interesting and awful visitations to which the surface of the earth is exposed. They are of a similar nature, but of much greater size than the cones of earth which formed on the coast of *Chili* during the great earthquake of 1822, where they are referred to fissures produced in the granitic rocks through which water mixed with mud was thrown up†. The alluvial plains of *Calabria* present similar cones of sand, indicating the alternate rising and sinking of the ground.

Sir W. HAMILTON explains such phenomena by supposing the first movement to have raised the fissured plain from below upwards, so that the rivers and stagnant waters in bogs sank down, but when the ground was returned with violence to its former position the mud was thrown up in jets through fissures‡.

Near *Kaeng* in *Rambree*, Lieutenant FOLEY found at the foot of one of these cones, masses resembling clink stone, of green color, very hard and sonorous when struck, and he naturally concluded that they must have been ejected from a volcanic vent.

Two of the largest of the cones are situated on a ridge of sandstone 300 feet in height, about 3 miles from *Kyouk Phyoo*, the capital of the island. From one of them called *Nayadong*, vapour and flame was seen by the inhabitants of *Kyouk Phyoo* to issue to the height of several hundred feet above the summit during the principal shock of the earthquake of the 26th August 1833. The phenomenon may have been occasioned by the concussion of the earthquake bursting open some new fissure from which a transitory stream of inflammable gas, such as that which supplies the celebrated burning fountain of *Chittagong* may have issued.

The island of *Chaduba* adjoining *Rambree* is represented in most old charts as a burning mountain, from which it may be alleged that early surveyors witnessed its eruptions; the higher ridges of neither of these islands have been examined, but the shores of *Chaduba*, like those of

* They were referred by some merely to the decomposition of iron pyrites.

† LYELL, 2, 232, 4th ed.

‡ LYELL, 2, 278. 4th ed.

Rambree, present numerous earthy cones, with springs of mud and gas on their summits.

Three miles south of *Chaduba*, there is a small cone composed of scoriaceous rocks, raised 200 feet above the sea; soundings at its base display those peculiarities which always characterise volcanic coasts*.

The above facts might alone be sufficient to prove the volcanic nature of the coast of *Arracan*, and to justify our extending the train of active volcanic agency from *Barren Island* to the 20° N. Lat. or within five degrees of the *Kásya* mountains as in the annexed map. But the events which took place on this coast during the great earthquake of the 2nd April 1762, and to which the earthy cones are no doubt referrible, place the question in a less doubtful point of view. Sixty square miles of the *Chittagong* coast, suddenly, and permanently subsided during this earthquake. *Ces-lung-Toom*, one of the *Mug* mountains, entirely disappeared, and another sunk so low that its summit only remained visible†. Four hills are described as having been variously rent asunder, leaving open chasms differing from 30 to 60 feet in width‡. In the plain, the earth opened in several places, throwing up water and mud of a sulphurous smell. At *Bar Charra*, 200 lives were lost on a tract of ground that sunk suddenly, but it is said that at *Arracan* where it was supposed the chief force was displayed§, the effects were as fatal as those of the earthquake which happened about the same period at *Lisbon*. At *Dacca* the waters rose so suddenly as to cast several hundred boats on shore, and on retiring, the wave which is described as terrible, swept numbers of persons away||.

* This is stated on the authority of Captain LLOYD, Marine Surveyor General, to whom the author is indebted for several other interesting items regarding this coast.

† Phil. Trans. vol. LIII. p. 256.

‡ Other mountains and hills were variously disturbed or destroyed, some partly or entirely thrown down so as to obstruct the course of rivers; others sank 25 and others 40 cubits. A *Toom* hill called *Chatter Puttuah*, is described as having "split by little and little till it became reduced to the level of the plain," and in other cases creeks were closed up by banks of sand rising from their bottom. See Phil. Trans. 1763; upon the whole the history of this earthquake may be supposed to be very incomplete, its effects in one district only of the extensive line of coast in which it happened being imperfectly described.

§ See also observations on the disappearance of various islands on the *Chittagong* coast, which are alluded to in the nautical works of the Arabs in the middle of the 16th century. (Journal As. Soc. 466.)—J. P.

|| As an instance of the readiness with which such visitations are forgotten, I may mention that a well written "Historical and Statistical Account of *Chittagong*" has recently been published by a gentleman many years resident in the province, in which no mention is made of this earthquake, though a Chronological list of 120 tájas is given, and the political history traced to a proportionally early date.

It is an interesting observation connected with this earthquake as with that of 26th August 1833, that although both were peculiarly felt at *Arracan*, as well as toward the hills on the northwest side of Bengal, yet they were comparatively little felt in several intermediate situations. At *Ghiroty* where Col. COOTE and a regiment of Europeans were at the time encamped the earthquake of 1762 is described as most alarming, the waters in the rivers and tanks being thrown up to the height of 6 feet, although at *Chandernagore*, only a few miles distant in a southeast direction, its effects were scarcely perceptible.

The earthquake of 26th August 1833, which was attended with the peculiar eruption already adverted to from one of the volcanoes near *Kyook Phyoo*, was more severely felt at *Mongir*, where the fort and several houses were injured, than in any intermediate position, which might lead us to suppose that although the volcanic energy of the igneous bands we have pointed out may have become extinct, or at least comparatively dormant as they recede from the seas on either side of India, yet that they are still the peculiar seat of occasional disturbance.

The province of *Cutch* already adverted to as forming the western boundary of the carboniferous zone, lost a considerable portion of its surface, which subsided suddenly during an earthquake in 1819, while at the same time an adjoining tract was raised to a higher position than it had previously occupied*.

Although the surface may seem to have acquired greater stability in recent times in proportion as we proceed inland from the points at which the two volcanic bands are intersected by the seas at *Cutch*, and *Chittagong*, yet as far as we are prepared to judge from unquestionable data, the amount of disturbance which has taken place appears to increase as we proceed from *Cutch* towards the east, and from *Chittagong* towards the north, until we arrive at that situation at which both bands meet and cross each other; and thus by a species of synthesis, we find the common focus of disturbance to be situated in the *Kásya* mountains, about the very position in which we have the most direct and unquestionable proof of concentrated action, the circumstances of the raised beach being sufficient evidence of these mountains having been raised to nearly twice their former height since the commencement of the tertiary period.

It remains for the present uncertain whether so great a change in the physical features of India has been effected by paroxysmal violence, such as occasionally even in our own times has been known to destroy one portion of the land, and to raise up another, or by a slow and gradual

* Lyell, 11. 237, also see Capt. BURNES' report on Cutch.—ED.

perpetuation of elevatory movements. It has been before remarked that a destruction of an elevated tract of land, which probably formed a more or less complete series of ridges extending between *Rajmahl* and the *Garrow* mountains, may have taken place.

Considering the geological features of those table-lands and mountain chains which extend from *Rajmahl* to the gulf of *Cambay* on the one side, and from the *Garrow* mountains to the *Himálaya* on the other, it becomes a matter of greater probability that the present breach between *Rajmahl* and the *Garrow* mountains was more or less occupied by hills and table-lands, than that this tract of plain escaped all those vicissitudes to which every other feature of our geography has been subject. If this tract, like every other portion of the band which it contributes to form, once presented elevated lands, they would necessarily have formed the northern coast of that sea which it is evident from the remains of an estuary in the *Caribari* hills, as well as from the littoral remains which are spread over the surface of the *Kásya* mountains, must have occupied the place of the present plains of Bengal.

If we admit this reasoning to be correct, little ingenuity will be required to account in a satisfactory way for some of the most interesting points in our geology. The destruction of the highlands, which it is thus probable once filled the space alluded to, by subsidence during some great paroxysm, when another tract of equal extent may have been elevated; or by means of a succession of earthquakes, to the destructive effects of which the action of a sea on the one side, and of the waters of the two great rivers on the other, would powerfully contribute. The interesting discoveries now in progress in Fort William of the bones of land animals intermingled with those of amphibious reptiles and fragments of mountain limestone, wood, and coal, at a depth of from 370 to 450 feet* beneath this portion of the Gangetic delta, seem to refer to some such destruction of dry land on the northern side of Bengal, as that which has been here supposed to have taken place†.

Should the catastrophe referred to have been sudden, we may easily imagine that a devastating wave would have been occasioned of sufficient

* I here refer to the experiment of boring for water now carried on in Fort William, in which process the augur, five inches in diameter, brought up nothing but clays, sands, and gravels, until the depth of 350 feet had been attained, when the lower end of a humerus, supposed by Mr. J. PRINSEP to resemble that of a hyena, was extracted. Soon after a portion of the rib, a chelonian reptile, with detached fragments of mountain limestone resembling that of the *Kásya* mountains, but much corroded, as well as fragments of wood, coal, &c. The depth now attained is 450 feet, and the work is still going on with spirit.

† Two other fragments of the plastron of a turtle have just been brought up from 450 feet depth.—ED.

extent to account for many of the denuded features presented by the geology of Central, and Southern India. The overthrow of the mammoth, whose gigantic remains have been brought to light in such abundance in Central India by Dr. SPILSBURY, may have been occasioned by the same cause; and should signs of upheavement be found to extend at intervals from the raised beach at *Chirra Punji*, towards *Ava* and the *Chittagong* coast, we may be able to refer the destruction of the various species of mastodon, and other extinct animals whose bones are extensively dispersed throughout *Burma*, to the events which took place at the time of such commotion. When the countries in this direction shall have been farther explored by geologists, we may expect to arrive at more exact conclusions than at present, as to the time these changes took place, and the circumstances of the animal and vegetable kingdoms under which they occurred.

Description of the Plates.

MAP.—PLATE VI.

The geological map of Upper India has been constructed chiefly from the authorities referred to in the text; its utility will probably consist merely in shewing how much remains to be done in researches of this nature. The publications of BUCHANAN, HEYNE, VOYSEY, CRAWFORD, DAVY, and many more recent writers, as BENZA, STIRLING, BABINGTON, PEMBERTON, LOW, and several others, some of whose inquiries are still in progress, will probably, when carefully examined, afford sufficient materials for including the southern portion of the continent in this geological sketch. The want of sufficient information regarding the Great Desert has prevented more being said on the subject than occurs in paras. 142-3: barometrical measurements of its levels, and the navigableness of the *Loony* or Salt River, are objects well deserving the attention of future travellers in this quarter. The delineation of the rocks on this portion of the map has been partly derived from ELPHINSTONE'S *Journey to Cabul*, and Lieutenant BOILEAU'S recent work on the Desert States, which I have not had an opportunity of acknowledging in the text.

PLATE VII.

Fig. 1. Fragment of a *Phytolithus transversus*, from the coal at *Serarim* in the *Kasya* mountains.

Fig. 2. Apparently the mould of a stem found in the shale adjoining the coal measures at *Chirra Punji*.

Figs. 4, 5, 6, 7. Several views of a fossil which Mr. GRIFFITH thinks is probably the lomentum of a species of mimosa, found imbedded in the red sandstone on the road between *Chirra* and *Serarim*.

Fig. 3. Found with the above fruit, and is probably a portion of the stem of the plant to which the fruit belonged.

Figs. 8, 9, 10, 11. Teredinites, found in great abundance in the *Chirra Punji* sandstone, on which the limestone and coal rest.

Fig. 11. From the shale adjoining the coal at *Chirra*.











Fig. 12. Shell from the lower beds of the great sandstone.

PLATE VIII.

Organic remains from the limestone which intervenes between the teredinite sandstone and the coal at *Chirra*. The same remains are also

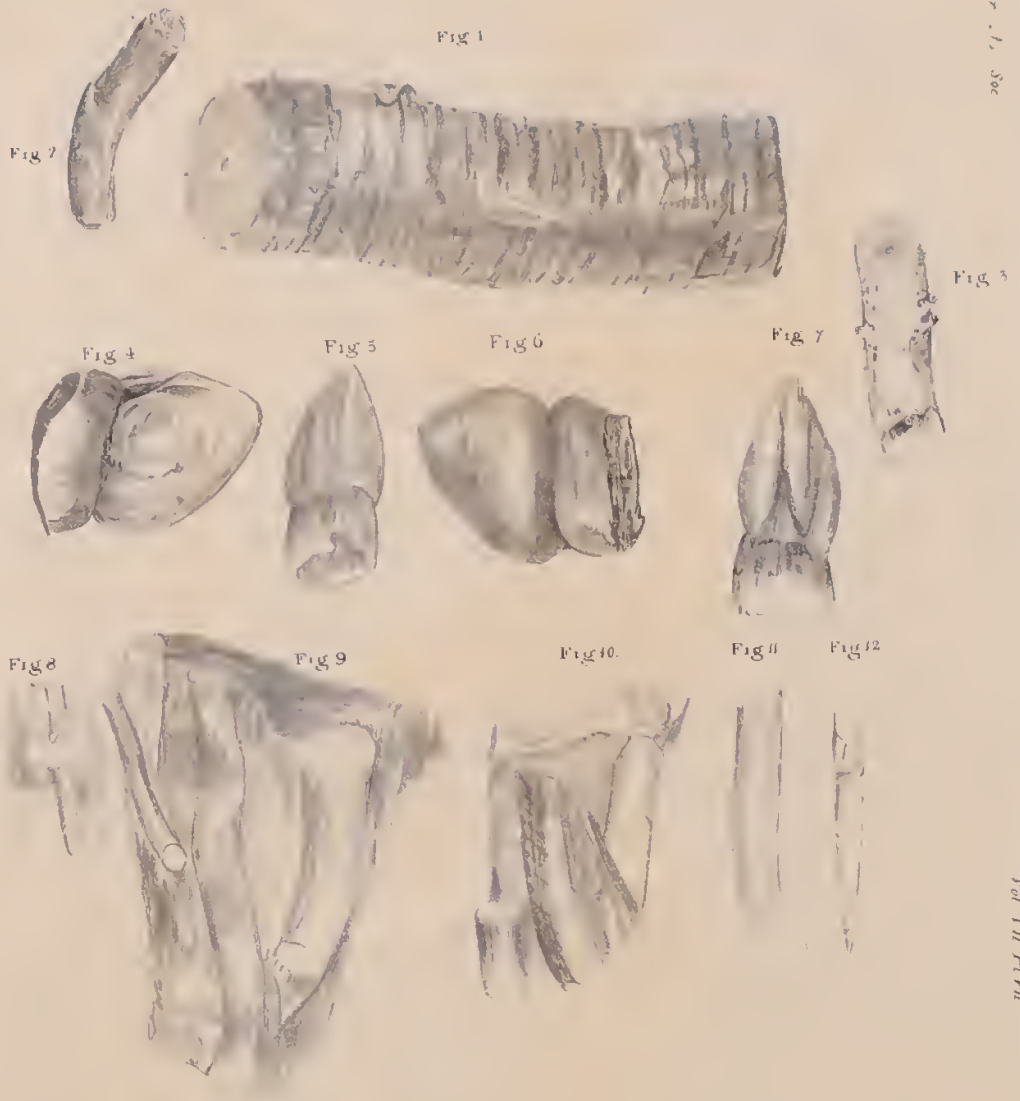


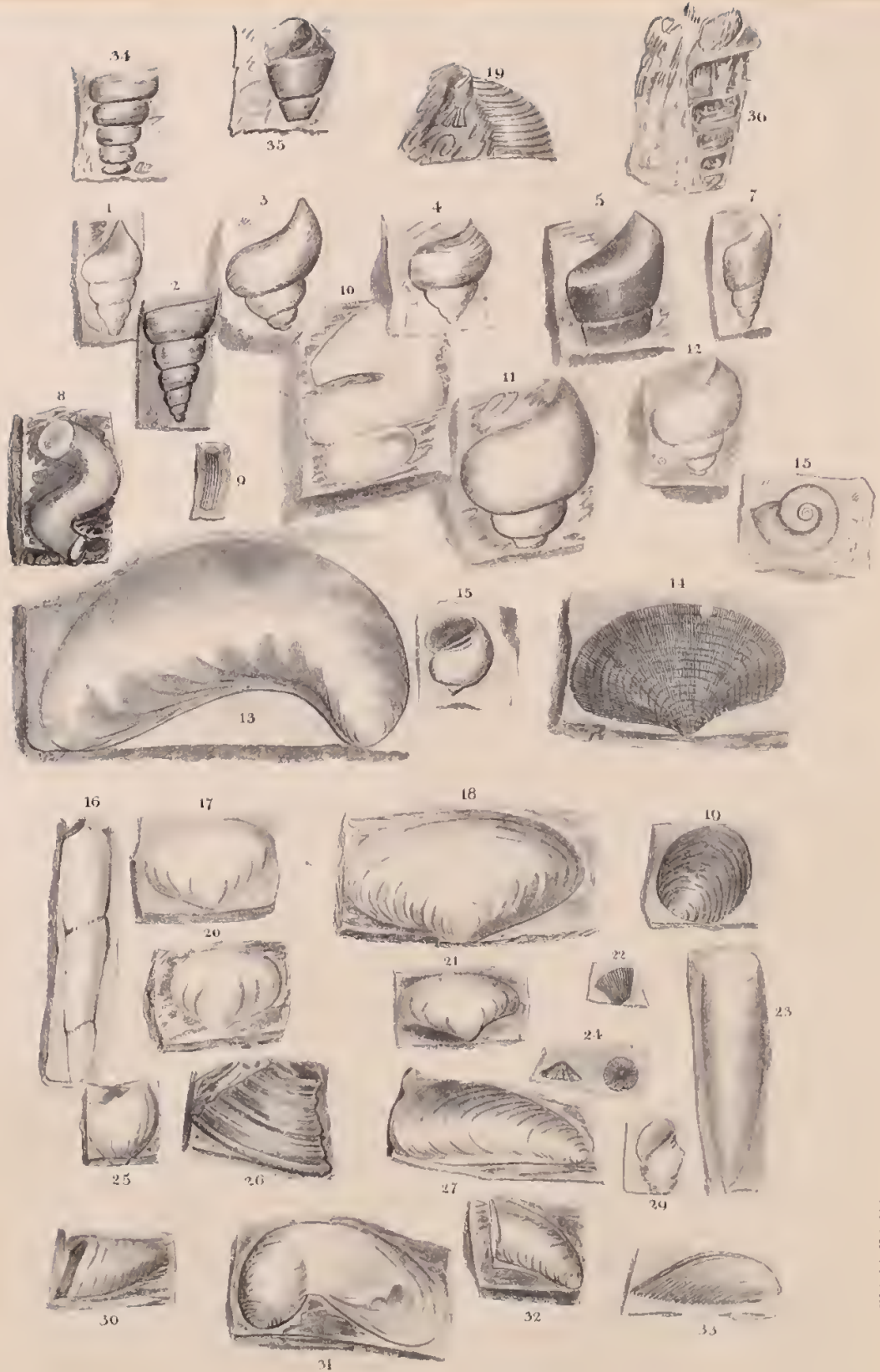
References

-  Primaries Rocks
-  Granitic Rocks
-  Sand Stone
-  Amygdales
-  Basalt
-  Salt
-  Lime Stone
-  Coal
-  Recent alluvium
-  Active volcanic train

1881, Vol. 302

Vol. 1, 1881





Fossil shells from the limestone of the Coal measures at Cherro

contained in the limestone connected with coal in *Assam*, and may be found on farther inquiry to characterise this member of the coal measures generally throughout India.

The fossils represented in the above plates, together with the views to which they have partly given rise, are so much of the results of my late journey to *Assam*, as appear at present to be connected with the subject of coal. Other more extensive collections of a similar nature from the raised beach referred in section II., are less connected with the natural history of our coal-fields, but will be progressively brought forward on more suitable occasions: in the mean time Dr. CANTOR has kindly undertaken to submit a sample of the whole to naturalists at home, whose views will be a guide to farther investigations on the subject.

J. M.

IX.—*Abstract of a Meteorological Register kept at the Cathmandu Residency for the month of September, 1837. By A. CAMPBELL, Esq. Nipal Residency.*

Day.	Observations at 10 A. M.				Observations at 4 P. M.				Wind, Weather, Rain.		
	Barometer.	Thermometer.			Barometer.	Thermometer.			At 10 A. M.	At 4 P. M.	Rain.
		Height at 32° Fah.	In Air.	Wet bulb.		Difference.	Height at 32° Fah.	In Air.				Wet bulb.	Difference.
1	25,242	74	69	5	25,176	78	70	8	W. Cloudy.	N.W. Clear	
2	,258	74	69	5	,165	75	70	6	Do. Do.	W. Shy.	
3	,270	73	68	5	,174	78	70	8	N. W. Do.	W. Fair.	519
4	,202	73	68	5	,083	75	69	6	W. Do.	S. W. Rain	346
5	,181	71	66	5	,089	75	70	5	Do. Do.	W. Cloudy.	200
6	,141	71	66	5	,111	72	68	4	S. W. Do.	S. W. Rn.	
7	,147	72	68	4	,107	72	68	4	Do. Do.	S. E. Do.	250
8	,221	72	68	4	,146	74	70	4	W. Do.	W. Fine.	865
9	,247	72	68	4	,191	72	69	3	Do. Do.	S. W. Rn.	1,297
10	,259	71	68	3	,190	74	70	4	S. W. Fair.	W. Clear.	519
11	,287	71	67	4	,207	76	70	6	W. Clear.	W. Thund.	
12	,328	70	66	4	,268	70	66	4	W. Cloudy.	W. Calm.	1,020
13	,338	70	66	4	,280	77	70	7	W. Clear.	Do. Bright.	150
14	,389	72	68	4	,279	76	70	6	S. W. Cdy.	Do. Do.	
15	,369	72	68	4	,279	75	71	4	W. Clear.	S. W. Cdy.	
16	,295	72	68	4	,199	75	70	5	S. W. Cdy.	Do. Do.	
17	,229	72	68	4	,166	77	72	5	Do. Clear.	W. Clear.	
18	,291	72	66	6	,240	73	67	6	W. Do.	S. W. Cld.	
19	,337	71	65	6	,283	75	68	7	S. W. Cdy.	W. Clear.	
20	,372	70	66	4	,297	75	66	9	Do. Do.	Do. Do.	
21	,427	68	64	4	,305	75	68	7	W. Clear.	Do. Do.	
22	,449	69	64	5	,339	73	68	5	Do. Do.	Do. Do.	
23	,454	69	64	5	,331	72	66	6	Do. Do.	Do. Cldy.	
24											
25											
26											
27											
28											
29											
30											
31											
Mn.	25,292	71.3	66.8	4.5	25,257	74.5	68.6	5.9			5.166

No Rain since the 13th but the neighbouring mountain tops have been cloudy throughout the month. A slight shock of earthquake at 11-45 P. M. of the 8th.

X.—Meteorological Register kept at Darjiling, for September, 1837. By Dr. H. CHAPMAN.

Day	Barometer.			Ther. in Air.			Wet Bulb. Tr.			Regtg. Ther.			Dew-point.		Rain. Inches	Wind.		Weather, &c.		Boiling Point Water.
	10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	10 P. M.	10 A. M.	4 P. M.	Morn.	Even.	Morn.		Even.				
1	23.300	23.203		68	66.5	62.5	60	59.5	70	62.5	58.5	N. E.	S.	0.66	Cirri. cum. intpspd. Hvy. cly. N. & N.W. Thin fog.				.7	
2	.316	.210		63	62.5	61	61.5	54.5	68.5	61	61.5	N.	S. W.	64	Generally overcast. Fog and drizzle.				.7	
3	.319	.240		61	58.5	60	58	56	61.5	58	60	N. E.	E.	64	Fog and drizzle.				.7	
4	.246	.162		60	60.5	59.5	60	55.5	63	59.5	60	N. E.	S. S. W.	35	Fog. Ditto ditto.				.5	
5	.211	.148		59.5	61.5	59	60.5	57	62.5	59	60.5	N. E.	Calm.	59	Fog and rain. Cirri and cum intpspd.				.5	
6	.195	.122		64	64	62	62.5	56	66.5	56	62.5	Calm.	Calm.	1.29	Cum and cirri intpspd. Rain fog in vallies.				.5	
7	.190	.127		59	61	58.5	59	57.5	66	60	61	N. E.	N. E.	87	Heavy rain. Cum. intpspd. Cloudy.				.6	
8	.257	.205		65	63.5	60.5	61	56.5	66	63	63	N. E.	Calm.	02	Generally clear. Cloudy.				.6	
9	.290	.215		65.5	62.5	62.5	63	56.5	66	63	65	N. W.	W.	...	Cum. interspersed. Ditto.				.5	
10	.300	.223		68	67.5	64	65	57	69.5	67	62.5	E.	S. W.	2.43	Cloudy. Cum. and cirri. Clearing.				.6	
11	.324	.245		66.5	65.5	63	60	58	67	62.5	60	N. E.	Calm.	64	Fog and drizzling rain. Overcast.				.7	
12	.350	.300		59.5	61	59	60	55	62	59	60	S. W.	S. W.	03	Generally overcast. Overcast and foggy.				.8	
13	.360	.300		64.5	62	62	60.5	56.5	65.5	63	62.5	Calm.	S. S. W.	04	Ditto. Overcast.				.8	
14	.388	.310		65	64.5	63	62.5	56.5	65	63	61.5	ditto	S. W.	12	Overcast and foggy. Ditto.				.8	
15	.395	.314		63.5	63	61.5	61	56	65	65	62	W.	W.	02	Overcast and foggy. Ditto.				.6	
16	.303	.192		64.5	61.5	62	60	58	65	62	60	W.	W.	31	Overcast. Fog and foggy.				.5	
17	.250	.184		64	61.5	61.5	60.5	57	64.5	61	60.5	W.	S. W.	19	Rain and fog. Ditto.				.7	
18	.292	.236		61.5	60	60	58.5	55	62	58.5	58.5	Calm.	Calm.	06	Overcast and fog. Cloudy.				.7	
19	.328	.280		59	59.5	58	58.5	55	60.5	58	58.5	W.	W.	08	Overcast and foggy. Clouds breaking.				.7	
20	.397	.305		60.5	62.5	59	61	55	64	59	61	ditto	W. S. W.	42	Galy. overcast & dzgg. rn. Ditto.				200.0	
21	.414	.320		59.5	62.5	59	61	55	61	57	57.5	E.	W.	56	Overcast. Ditto.				200.0	
22	.442	.376		58	59	57	57.5	55	61	57	57.5	...	...	...	Overcast. Ditto.				199.8
23	.446	.334		60	62	58	60	53	65.5	58	60	Calm.	Calm.	01	Cloudy, cumuli. Cloudy (cum.)				.7	
24	.410	.300		60.5	63.5	58	60	53.5	65.5	58	60	S. W.	S. W.	01	Cloudy. Cumuli. Cloudy (cum.)				.7	
25	.390	.280		59.5	63.5	58	60.5	53	64.5	58	60	Calm.	Calm.	55	Generally overcast. Overcast.				200.0	
26	.374	.278		57	57	55.5	55	53	61	55.5	57	ditto	ditto	21	Cloudy. Cumuli. intpspd.				200.0	
27	.434	.343		62	61	59	57	51.5	63	59	57	N.	N.	03	Ditto ditto. Ditto.				200.0	
28	.446	.330		63	63	59.5	59	52	66	59.5	59	Calm.	W.	...	Clear. Cldy. cirri. & cum. intpspd				199.8	
29	.444	.350		67	65	64	62	53	67	64	62	ditto	ditto	...						
30	.437	.356		65	62.5	61.5	59	52.5	65.5	61.5	59	ditto	ditto	07						
Mn.	23.341	23.259		62.4	62.3	60.3	60.1	55.2	64.7	60.3	60.1			13.59						

Rain by Corsley's Pluviometer 15.47 inches.

Darjiling, October, 1837.

Day	Barometer.		Ther.		Wet Bulb. Tr.		Regg. Ther.		Dew-point.		Rain.		Wind.		Appearance of the Sky, &c.		Boiling Point Water.
	10 A.M.	4 P.M.	10 A.M.	4 P.M.	10 A.M.	4 P.M.	10 A.M.	4 P.M.	10 A.M.	4 P.M.	Inches	Morn.	Even.	Morning.	Evening.		
1	23.442	23.342	65	67	61	63	53	68	60.5	63	....	Calm.	W.	Clear.	Cloudy.	199.8
2	.408	.310	66	63	62	59.5	53.5	67	62	59.5	....	Ditto	Calm	Cloudy cumuli.	Cum : interspersed.	.8
3	.395	.294	68	62	64	59	53.5	68	64	59	....	Ditto	S. W.	Cum. interspersed.	Cloudy thunder to W.	200.0
4	.384	.288	65	64	58.5	57	53.5	67	57	56	0.08	E.	Calm	Generally clear.	Cum. interspersed.	199.8	
5	.382	.308	66	54.5	54	50.5	50.5	67	54	50	3.47	N. E.	N. N. E.	Rain.	Rain.	.8	
6	.376	.316	54.5	55	53.5	54	51	55	54	51	4.87	N. N. E.	N. E.	Heavy rain.	Heavy rain and fog.	.7	
7	.345	.275	54	52.5	53.5	51	52	55	53.5	51	2.58	N. E.	N. E.	Ditto ditto.	Rain.	.5	
8	.280	.195	62	63	58	59.5	50	63	58	59.5	03	N. E.	W.	Generally clear.	Cloudy.	.5	
9	.260	.190	60.5	60.5	57	57.5	53.5	63	58	57.5	01	Calm.	S. W.	Cum. interspersed.	Ditto.	.5	
10	.316	.237	61	61	58	59	53.5	64	58	61	....	Ditto.	Calm.	Cloudy.	Ditto.	.6
11	.350	.274	63	65	51.5	58	52.5	67	47	57	....	N. E.	S. W.	Clear.	Clear.	.6
12	.375	.315	62	64	57	59	52.5	67	57	53.5	....	N. E.	W. S. W.	Generally clear.	Cumuli.	.7
13	.425	.375	62	64	59	60	51.5	66.5	59	60	....	E.	S. W.	Cloudy S. & S. W.	Cloudy.	.8
14	.434	.355	62	62	58.5	58	53	66.5	53.5	58.5	....	Calm.	W. S. W.	Cloudy.	Ditto.	.8
15	.407	.320	59	60	56.5	56	51.5	63.5	56.5	56	....	N. E.	S. W.	Ditto.	Ditto.	.8
16	.391	.312	59.5	58	55	54	49	61	55	54	25	E.	S. E.	Cum. interspersed	Com. interspersed.	.7	
17	.420	.373	60	62.5	53.5	57.5	45	62.5	50	57.5	....	S. W.	W.	Generally clear.	Ditto ditto.	.7
18	.516	.439	62	60	55	55	48	63	53	54	....	W.	W.	Clear.	Cloudy.	200.0
19	.556	.495	64	65	52	58	50	67	46	56	....	Calm.	S. W.	Clear.	Clear.	.2
20	.558	.448	64	64.5	56.5	56	50	65	55.5	52	....	W.	S. W.	Ditto.	Ditto.	.2
21	.472	.377	62	61	49.5	53.5	49.5	65	40	53	....	S. W.	W.	Cirri interspersed.	Cloudy cirri.	200.0
22	.411	.300	63	60.5	57	55.5	50	64.5	....	....	....	S. W.	S. W.	Cloudy cirri.	Cumuli.	..
23	.389	.328	55.5	58	53	54	47	60	....	....	....	N. E.	N. E.	Overcast.	Ditto.	..
24	.438	.346	58.5	58	53.5	54	46	62	54.5	54	005	N. E.	N. E.	Overcast.	Overcast thunder N.	00.0	
25	.424	.372	59.5	59	55	56	46	62	55	55.5	....	N. E.	S. W.	Ditto.	Cumuli.	199.7
26	.420	.390	64	60.5	57	55.5	48	64	56	55	....	N. E.	S. S. W.	Ditto.	Cum. interspersed.	200.0
27	.448	.368	64	64	56	57	48	65	53	52	....	W.	W.	Ditto.	Clear.	199.7
28	.400	.372	56	61	50	55	46	62	43	52	....	N. E.	W.	Ditto.	Ditto.	.8
29	.438	.364	54	60	46.5	52	44	62	38.5	49	....	N. E.	W.	Ditto.	Ditto.	.8
30	.450	.380	56	59	51	53	44	60	44.5	48.5	....	W.	W.	Ditto.	Ditto.	.7
31	.380	.300	50	58	44.5	51.5	43.5	59	37	47	....	N. E.	W.	Ditto.	Ditto.	.7
Mn.	23.409	23.334	60	60.5	55	56	49.5	66.5	53	55	11.295	....	....	....	....	....

Meteorological Register kept at Darjiling, for November, 1837. By Lt. Col. LLOYD, to complete the year.

Day	Barometer.		Therm. in Air.		Wet Bulb.		Regtg. Ther.		Dew-point.		Rain.	Wind.		Weather, &c.		Boiling Point Water.	
	10 A. M.	4 P. M.	10 A.	4 P. M.	10 A. M.	4 P. M.	Max.	Min.	10 A. M.	4 P. M.		Inches	Morn.	Even.	Morning.		Evening.
1	23.318	23.228	53.5	52	49	50	44.5	59	45	49	..	N. E.	S. W.	Clear.	Overcast.	199.5	
2	.348	.296	48	54	46	52	43	56	44	50	..	N. E.	S. W.	Cloudy.	Cumuli.	.4	
3	.432	.332	53.5	57	50	51	43.5	59.5	44.5	46	..	N. E.	S. W.	Clear.	Cloudy.	.5	
4	.410	.322	57	60	51	53	45	61	45	49	..	N. E.	W.	Clear.	Cumuli.	.7	
5	.348	.256	53	54.5	49	50	44	57	47	50	..	N.	W.S.W.	Cirri. interspersed.	Cumuli interspersed.	.4	
6	.296	..	50	..	47.5	..	41.5	..	48	..	..	N.	..	Cirri.	..	.3
7	..	.252	..	52	..	49	42.5	55.5	..	50	S. W.	..	Cloudy.
8	.374	.272	53	57	50	53	42	58	48.5	51	..	N.	W.	Cirri.	Cumuli.	.6	
9	.350	.258	50.5	58	46	53.5	43	60	40	52	..	N.	W.	Clear.	Ditto.	.7	
10	.382	.300	55	60	50	54.5	46.5	61	49	53	..	N.	W.	Ditto.	Cirri.	.9	
11	.370	.280	55.5	55.5	52.5	52	45.5	57.5	53	53	..	N. E.	S. W.	Cirri.	Cloudy.	.7	
12	.350	.284	55	56.5	53	52	45	58.5	53	52.5	..	N.	N. E.	W. Cumuli.	Cumuli.	.5	
13	.386	.324	55	58	50.5	53	46	61	48	52.5	..	N.	S.S.W.	Cirri.	Ditto.	.7	
14	.360	.318	57	57.5	52	53	47	63	49	52	..	N.	W.	Clear.	Cirri interspersed.	.7	
15	.360	.264	57	56.5	54	51.5	45.5	61	52	51	..	N.W.	W.S.W.	Clear.	Overcast.	.8	
16	.348	.250	53	50	51	51	45	55	49	51	..	N. E.	N. E.	Cumuli.	Ditto.	.3	
17	.366	.342	55	54	53	52.5	45	57	53	53	..	N. E.	W.	Cirri Cumuli.	Cloudy.	.5	
18	.434	.348	54	55	51.5	52.5	46	57	50	52	.02	N. E.	N. W.	Cirri.	Ditto.	.6	
19	.398	.334	53.5	52.5	51	50	47	58	51	50	..	N.	W.S.W.	Cirri strati.	Ditto.	.7	
20	.420	.302	56	54	53	51	46	56	52.5	51	..	N.	W.	Cirri generally fine.	Overcast.	.7	
21	.374	.308	44	53	51.5	51	45	55	51	51	..	N. E.	N. E.	Cirri strati fine.	Cloudy.	.8	
22	.384	.292	55	53	53	50.5	44.5	55	53	50	..	N. E.	N. E.	Cirri.	Ditto.	.8	
23	.360	.250	52	53	49.5	50	43.5	55	49	50	..	N. W.	W.	Clear.	Ditto.	.6	
24	.340	.270	47	49	46	48	43.5	51.5	46	47	.04	N. E.	W.	Cloudy.	Thick fog.	.5	
25	.372	.286	48	49	47	48	42	51	46	47	..	N. E.	N. E.	Ditto.	Overcast.	.4	
26	.304	.212	47	48.5	46.5	46.5	41	50	46	46	..	N. N. E.	W.	Ditto.	Cloudy.	.5	
27	.274	.190	44	49	43	46	40	49.5	41.5	42	..	S.S.W.	W.	Overcast.	Ditto.	.3	
28	.324	.248	46.5	49	44.5	46	38	50.5	45	46	.09	N. E.	W.S.W.	Cirri strati.	Cirri cumuli.	.5	
29	.392	.350	49	52	47	49	39	53	47	46	..	N. E.	N. E.	Cirri.	Cirri.	.7	
30	.478	.390	46.5	53	42	43	40	55	32	32	..	N. E.	N. E.	Clear.	Clear.	200.0	
Mn.	23.368	23.290	52	53.5	49	50	43.5	56.5	47.5	48.5	.15	..	..	..	..	..
14th December 1837,	Barometer.										Thermometer,	42.	Boiling point water,		198.7		
Ditto,	10 A. M.										Ditto,	52	Ditto,		197.8		
17th	Noon.										Ditto,	51	Ditto,		197		
Ditto,	1 P. M.										Ditto,	57	Ditto,		196.5		
Ditto,	2 P. M.										Ditto,	..	Ditto,		..		

XI.—Proceedings of the Asiatic Society.

Wednesday Evening, the 7th February, 1838.

D. HARE, Esq., senior member present, in the chair.

Major W. H. SLEEMAN, Messrs. J. W. GRANT, G. A. PRINSEP, Assistant Surgeon J. ARNOTT, and Dr. BONSALE, were elected ordinary members of the Society.

SYED KERA MAT ALI, proposed at the last meeting, was upon the recommendation of the Committee of Papers elected an associate member.

The CHEVALIER AMÉDÉE JAUBERT, President of the Asiatic Society of Paris, proposed at the last meeting, was upon the favorable report of the Committee of Papers, elected an honorary member.

CHARLES FRASER, Esq. Commissioner at *Hoshungabad*, and MANATON OMMANEY, Esq., proposed by the Secretary, seconded by Col. CAULFIELD.

Dr. W. H. GREEN, proposed by the Secretary, seconded by Dr. McCLELLAND.

Lieut. A. BIGGE, Assistant to the Governor General's agent in *Assam*, proposed by Captain PEMBERTON, seconded by the Secretary.

Mr. W. DENT, requested that his name might be withdrawn from the list of members from the beginning of the current year.

Read letters from M. E. BURNOUF, and Dr. JULES MOHL, acknowledging the arrival of the several cases of Sanskrit books, dispatched hence last year; and presenting various works. (See Library.)

Dr. MOHL, mentions having obtained for the Society, a copy of the first volume of the *Collection Orientale* now under publication at great cost by the French Government. It contains the first part of *Raschideddin*, by M. QUATREME'RE DE QUINCEY.

Also, letters from the Secretaries of the American Philosophical Society and the Cambridge Philosophical Society acknowledging the receipt of the *Researches*, vol. xx.

Read a letter from M. CSOMA DE KÖRÖS, thanking the Society for the renewed accommodation afforded him during his stay in Calcutta.

Read a letter from MAHA'RAJA HINDU RAÓ, stating his readiness to deliver the fragments of the Ancient Hindu Pillar, to the executive engineer when required.

Library.

Read a letter from Professor WILSON, presenting copy of his translation of "The Sākhya Káriká" or memorial verses on the Sākhya philosophy.

Read a letter from J. VAUGHAN, Esq. Librarian of the American Philosophical Society, forwarding for presentation a copy of Vol. V. part 3rd of their transactions.

The following works presented by the Asiatic Society of Paris.

Geographie d'Aboulfeda, texte arabe, de par M. M. REINAUD, et le Baron MACGUCKIN DE SLANE.

Elements de la langue Géorgienne, par M. BROSSET Jeune.

Also, a number of duplicates of the *Journal Asiatique* to complete the Society's series.

The following Books were likewise presented:—

Verhandelingen Van Het Bataviasche Genootschap Van Kunsten En Wetenschappen—by the *Batavian Society*.

Narrative of a tour through the Western states of *Rājwára* in 1835, by Lieut. A. H. E. BOILEAU, Engineers—by the *Honorable Government*.

Report on *Amherst Town* and the *Tenasserim Provinces*, by Dr. J. W. HELFER, 2 copies—presented by F. J. Halliday, Sec. on the part of Government.

Reports of a committee for investigating the coal and mineral resources of India—by the Committee's Sec. Dr. McCLELLAND.

The Quarterly Journal of the Calcutta Medical and Physical Society, Nos. 4 and 5—by the Editors.

Proceedings of the Geological Society of London, No. 51—by the Society.

Meteorological Register for Dec. 1837—by the Surveyor General.

From the Booksellers.

Lardner's Cabinet Cyclopædia—Domestic Economy.

Wellesley Dispatches, Vol. V.

The Secretary read the following letter from Government on the subject of the Journal, deeming it, though of more immediate concern to himself as editor and proprietor of that work, in principle addressed to the Society, whose labours it eulogized.

To JAMES PRINSEP, Esq. *Secretary to the Asiatic Society.*

SIR,

I am directed by the Honorable the Deputy Governor of Bengal to transmit to you the annexed extract from a letter, No. 51 of 1837, from the Honorable the Court of Directors in the public department, dated the 25th October, in order that the wishes of the Honorable Court in regard to the transmission of 40 copies of the Society's Journal from its commencement to the period of dispatch may be complied with, and that 40 copies of each of the succeeding numbers as they shall respectively appear, be in future forwarded to this Department, and for transmission to the Honorable Court.

Fort William, }
17th January, 1838. }

I have the honor to be, &c.

(Signed) H. T. PRINSEP,
Secy. to Govt.

Extract from Letter, No. 51, of 1837, from the Honorable the Court of Directors, dated the 25th October.

“ We have always felt the importance of affording due encouragement to the promotion of learned and scientific pursuits in the territories subject to our Government, and more especially to those branches of knowledge which have peculiar reference to Oriental objects. The Asiatic Society of Bengal, having labored long and successfully to collect and diffuse the best and most accurate information upon such topics, we desire that you forward to us 40 copies of the Journal of that Society from its commencement to the period of dispatch; and that you will subsequently continue to transmit 40 copies of each of the succeeding numbers as they shall respectively appear.”

(True extract,)

H. T. PRINSEP, *Secy. to Govt.*

A representation having lately been made to Government respecting the publication of the Bishop of Cochin China's Vocabulary forming an Appendix to the Dictionary now nearly completed, the following answer was received.

To JAMES PRINSEP, Esq. *Secretary to the Asiatic Society.*

SIR,

I am directed to acknowledge the receipt of your letter, dated the 13th instant, soliciting that the Government will take upon itself the entire expence of printing the Vocabulary or English Appendix to the Cochin Chinese and Latin Dictionary about to be published by the right reverend the Catholic Bishop of Isauropolis in lieu of paying for the 100 additional copies of this part of the work; and in reply to state, that under the representation now made, the Honorable the President in Council is prepared to authorize the expenditure of a sum not exceeding 1,500 rupees for the publication of 1,300 copies of the Vocabulary of the Anamitan language which has been prepared at the suggestion of Government with the map, &c, in lieu of taking the 100 additional copies as originally proposed.

I am, &c.

Council Chamber, }
17th January, 1838. }

H. T. PRINSEP, *Secy. to Govt.*

Bábu RAM COMUL SENA communicated an offer, from Maulavi HAFIZ QABIR, of 1,200 rupees for the imperfect set of the *Fatáwa Alemgiri*. Referred to the Committee of Papers.

The Librarian submitted a statement of the books bound and repaired from November to January, in all 146 volumes; a daftarie's bill for Rs. 63 2 was passed.

The following extract of a letter from Professor WILSON, to the Secretary, dated 5th September, 1837, having been read:—

“ We have in the library at the East India House an excellent bust of the late Mr. COLEBROOKE by Chantrey, a copy of which the artist would furnish for £60. It would form a valuable addition to your Society's statuary if 600 rupees could be raised for the purpose.”—

Proposed by the Secretary seconded by Captain SANDERS and carried unanimously;—

That, in order to profit by Professor WILSON's most welcome suggestion, and to obtain a lasting memorial of HENRY THOMAS COLEBROOKE to be placed in the Society's library, a subscription be set on foot among members of the Society in Calcutta and in the Mufasal.

It was further resolved that should the sum raised be more than sufficient to cover the expence contemplated, Mr. WILSON should be requested to procure, if possible, a similar memorial of Sir WILLIAM JONES, if there be any monument in England from which a good bust can be copied. And as the sum raised for Dr. MILL's portrait was also sufficient to pay for a bust by Chantrey, it was determined to modify the former resolution, and to request Dr. MILL also to sit to this eminent sculptor; by which means the Society will become possessed of four monuments of its most eminent orientalisists, equally ornamental and durable.

Antiquities.

Mr. D. LISTON forwarded facsimiles (or rather impressions) of the inscription on the *Kuhaon* and *Bágelpur* pillars in the *Gorakhpur* district.

[Published in the present Journal.]

Mr. J. H. BATTEN presented an impression of the inscription on the temple of *Bágheswar* (*Vyágreswara*) in *Kemaon*, with drawings of the old and modern temples there, and a *Nágari* report drawn up by the priests of the place, of the princes who formerly reigned in that district.

Capt. J. CAMPBELL, Asst. to the Commissioner, *Ganjam*, at the request of Mr. WILKINSON sent for presentation the *Gumsur* copperplate grants of which a lithograph and translation were published in the Journal, vol. VI.

Mr. L. WILKINSON, presented for deposit in the Society's museum the *Piplianagar* plates, translated by him in the Journal for July 1836.

The Secretary exhibited to the members present a number of Bactrian and Indo-Scythic coins collected by Captain BURNES at *Cabul* and from *Bokhara*.

Among them were three Indo-Sassanians dug up at the former place, which had enabled him to interpret the Sanskrit marginal legend of two similar coins found at *Manikyala*, by Genl. VENTURA. It proves to be a translation of the usual Pehlevi titles of the Persian monarchs of the Sassanian dynasty.

Mr. M. KITTOE presented for the museum, 6 arrows used by the Paiks in the *Kattuk* hills:—a Kund arrow from *Boad*; a Sikh spear.

Also, a small stone with inscription from the fort of *Kattak*, and a facsimile of another from the same place.

Various weapons used in *Nipál* were presented by Mr. B. H. HODGSON.

Physical.

Fourteen boxes of geological specimens collected in the *Shekawatí* country by Mr. EDMUND DEAN, were presented in his name to the museum; with a descriptive catalogue.

Mr. B. H. HODGSON presented a variety of the fishes of the sub-Himálayan streams preserved in spirits. Dr. McCLELLAND had examined and named these, and made drawings of such as were new.

List of Fishes presented to the Asiatic Society, by B. H. HODGSON, Esq.

- 1 Cyprinus mola, HAM. Figured Ganget. Fishes.
- 2 Cyprinus calbosus, ditto ditto ditto.
- 3 Cyprinus bacaila, ditto ditto ditto.
- 4 Cyprinus putitora.
- 5 Cyprinus shaera, and
- 6 Cyprinus chagunio of HAMILTON, unfigured and not received in consequence by the naturalists of Europe.
- 7 Cyprinus, a new species.
- 8 Cyprinus, probably new.
- 9 Achirus new?
- 10 Bola coitor, HAM. Figured and described in HAM. Gang. Fishes.
- 11 Pimelodus tengana, ditto ditto.

- 12 Chauda nama? HAM. Figured and described in HAM. Gang. Fishes.
- 13 Clupanodon cortius, ditto ditto.
- 14 Silurus canio, ditto ditto.
- 15 Pimelodus aor, ditto ditto.
- 16 Esox cancila, ditto ditto.
- 17 Coius cobojius, ditto ditto.
- 18 Silarus boalis, ditto ditto.
- 19 Gmnotus notopterus auctorum.
- 20 Macrogynathus armatus, HAM. Figured and described in Gang. Fishes.

Various specimens of butterflies and insects were presented by Mr. C. HARVEY.

A stuffed parrot, by Mr. X. NICOLAS. A black curlew by Dr. S. EVANS. A porcupine stuffed and mounted by Mr. BOUCHEZ. The Skeleton of a *Gosamp* or guana was presented by Mr. M. MASTERS.

A large collection of birds was received from Captain PEMBERTON for deposit until the return of his expedition.

The following extracts from a private letter dated the 1st and 11th instant, will interest those who are acquainted with the objects of the embassy :

"I yesterday crossed the frontier line and entered the *Bhotan* territory, after waiting for several days to afford my friends time to make their arrangements for the conveyance of our baggage and the collection of supplies ; but I found them quite as far advanced after a week's nominal labour as before their exertions commenced. I have opened communication with the *Devangiri* rāja who commands the *Buxa Dovar* pass by which I shall enter the *Bhotan* hills, and he has written to me in very friendly terms, promising a great deal when we meet. His residence is on the summit of the first range of mountains overlooking the *Assam* valley. I ought to have mentioned that this pass though called *Buxa* is not the *Dovar* by which TURNER travelled in 1783, but another bearing the same name, a little to the westward of north of *Gowhatty*. I have just been shewing some *Bhoteahs* the plates in TURNER with which they are delighted, and recognized the different places immediately. They are quite astonished at the extent of our knowledge.

Devangiri, Bhotan hills, January, 11, 1833.

Lat. 26° 50' 52" Long. 91° 37' 17". Height above the sea, 2,150 feet.

We left *Hazáragong* on the 2nd for *Goorgam* a small village at the foot of the hills where we halted for the night, and on the following morning entered the defiles of the hills, and travelled nearly the whole day over the rocky bed of the *Durung nullah* whose source is among the heights which immediately overhang *Devangiri* on the east. The stream is now scarcely more than ankle-deep, but in the rains it forms a rapid and impracticable torrent, rushing with immense velocity over its rocky bed. Boulders of granite, masses of hornblende-slate, micaceous-slate, brown and ochre-colored sandstones, are the principal rocks found in this torrent, and the heights on either side which rise almost perpendicularly from the stream, appear to be composed of a coarse granite which is rapidly decomposing. In some instances, the whole hill is a conglomerate formed of angular fragments of the different varieties of rock already enumerated, the fragments of pre-existing formations. These inferior heights when viewed from the plains present a very striking contrast to the more massive ranges of which they form an advanced barrier. Their sides are almost entirely bare of vegetation: slips are seen in every direction, having large white patches, which have a very singular and striking effect when contrasted with the dark foliage of the more lofty ranges beyond them. The peaks, some of which are from 500 to 800 feet high, rise very precipitously from the ridges on which they rest presenting all the characteristics of primitive rocks.

The ascent from the foot of the hill on which *Devangiri* stands commences about half a mile below the village and is rather precipitous, but presents nothing like the difficulties which I have frequently experienced in my former rambles. I was met by a deputation from the rāja with ponies and mules to convey us to the encampment, and being mounted on the favourite hybrid of royalty, I committed myself to the guidance of a stout limbed *Bhoteah* who led it by a halter. The ascent was accomplished by a succession of rushes: the guide stopping at every ten paces to take breath, and then hallooing to the animal made a second rush and we at length reached the summit with very little apparent distress to the powerful mule on which I was mounted. During the whole of this ascent, I sat perfectly secure between the well raised kante and pommel of the *Bhoteah* saddle, without even finding it necessary to touch the bridle. I was closely followed by an officer of some rank who must have ridden at least 15 stone, and he was conveyed up this

ascent with apparent ease by a little mule scarcely more than 11 hands high, one man leading the animal and one on each side supporting the back of the compound of silk, good humour, dirt and rank, on the little animal.

On the 5th, we paid our respects to the rāja and were received with all the state he could display on the occasion. He is a fine looking man of about 55 years of age with a strictly Mongolian countenance (that is superfluity of cheek bone and paucity of beard), he received us in the southern room of the second floor of a tolerably well built stone house, the ascent to which was by a plank notched into steps of such inadequate width that it is a service of no small danger to reach the presence by such devious ways. We found the rāja seated on a well-raised cushion with a colossal statue in front of him which I have since heard is intended to represent any one of the ten thousand dharmas who have been amusing themselves for the last eighteen centuries by periodical flights from defunct carcasses into living children. Every thing was conducted throughout this visit with a degree of polite urbanity which would hardly have been expected from a nation whom we have been accustomed to regard as so low in the scale of civilization; there was some distrust at first, but it has now evidently worn off, and we have established a mutual understanding which will, I trust, be productive of much eventual good.

I am just now about to pay the rāja a friendly visit, and intend taking CSOMA DE KOROS' Tibetan Grammar and Dictionary to shew him. As yet we are hardly sufficiently far north to obtain any very accurate information regarding the countries in that direction, but I have seen one or two very intelligent men who confidently affirm that the *Eroo Chownboo*, or river which flows between *Teshoo Lomboo* and *Hlassa*, is the *Burhampooter* of *Assam*, and that just before turning to the south it receives a river from the eastward which flows into it from *China*, which country they designate *Karree*, not *Geanna* as TURNER represents, this latter term being applied apparently to eastern Tartary. We expect to leave this in a day or two more, and hope to reach *Punakha* in twenty days. The general direction of our marches will be about northwest, and on the seventh day we shall enter a snowy region from which we shall not emerge until the eleventh march. The most interesting portion of our journey is therefore still before us, and thus far I have succeeded in having my instruments conveyed in safely. I have two excellent barometers from which my estimate of altitudes are deduced, and as I have frequently tested them in the course of journeys previously made by comparison with heights I examined trigonometrically, I know they are to be depended upon. My observations for latitude and time are taken with a Troughton's reflecting circle on a balanced stand, and my chronometer is one by BARRAUD which I purchased from Mr. GRAY just before leaving Calcutta. Its rate is 1" per diem gaining, and I have deduced the longitude of this place from *Gowhatty* by it. It is an excellent time-keeper and fully sustains the character Mr. GRAY gave it when it was purchased. We are enclosed on the north by peaks which must rise from two to four thousand feet above our present level; but vegetation flourishes exuberantly to the very summits of all the ranges visible, and I long for the sight of more rugged scenery. I have sent you another dispatch of birds, of which I enclose a list."

Mr. G. EVANS submitted to the meeting the Prospectus of a work by Capt. HARRIS of the Bombay Engineers, comprising twenty-eight paintings of the south African game quadrupeds with appropriate landscape, collected during a hunting expedition into the interior of Africa, wherein he had penetrated to the tropic of capricorn. Resolved, that members should be invited to patronize the work.

[See the Prospectus and list of Subscribers on the cover of the present Journal.]

The following bulletin of proceedings in the *Nerbudda* fossil field was extracted from a letter from Dr. SPILSBURY dated 15th January.

Major OUSELEY is very hard at work bringing out some unknown animal's head, the teeth running like the radii of a circle, 18 inches long. You will hereafter receive it along with a tusk that we cannot make out. The matrix is so very hard, that it requires skill as well as labor to get on. It was first trusted to a native and nearly spoilt. I chiselled out a splendid elephant's head at Saugor; there is also one here. As I have already sent you one, these are destined for different places. I hope you got the box of shells from WALKER, I have drawings of all the varieties we have yet discovered which shall be sent you by and bye with an account of the sites, also some new fossil sites, which I shall visit.

Colonel LLOYD forwarded meteorological Journals from *Darjiling* for October and November to complete the year's observations by Dr. CHAPMAN.

Meteorological Register, kept at the Assay Office, Calcutta, for the Month of January, 1838.

Day of the Month.	Observations at 10 A. M.					Observations at 4 P. M.					Temperature of water.		Rain.		Wind.		Weather.						
	Old Stand. Barometer at 39°.	New Stand. Barometer reduced.	Thermometer in air.	Depression of wet-bulb.	Do. by less.	Dew-point.	Hair Hygrometer.	Calculated Humidity.	Old Stand. Barometer at 39°.	New Stand. Barometer at 39°.	Thermometer in air.	Depression of wet-bulb.	Do. by less.	Dew-point.	Hair Hygrometer.	Calculated Humidity.	On the Ground.	At Elevation.	10 A. M.	4 P. M.	Forenoon.	Afternoon.	
1	30.040	30.004	68.8	10.6	9.0	73	45	47	29.839	29.857	74.0	14.2	10.0	68	34	41	n. w.	n. w.	n. w.	n. w.	clear.	clear.	
2	30.038	29.997	65.5	9.0	7.6	50	52	45	29.857	29.877	73.0	13.6	13.3	58	35	40	n. w.	n. w.	n. w.	n. w.	do	do	
3	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	12.3	62	37	34	n. w.	n. w.	n. w.	n. w.	do	do	
4	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.6	64	36	36	n. w.	n. w.	n. w.	n. w.	do	do	
5	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
6	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
7	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
8	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
9	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
10	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
11	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
12	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
13	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
14	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
15	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
16	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
17	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
18	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
19	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
20	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
21	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
22	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
23	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
24	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
25	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
26	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
27	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
28	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
29	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
30	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
31	30.037	29.997	65.1	9.0	8.3	49	52	45	29.857	29.877	71.9	13.3	11.1	48.5	69	34	n. w.	n. w.	n. w.	n. w.	do	do	
Mean.	30.020	29.985	67.5	9.0	8.4	46.5	76	51	29.903	29.937	74.5	15.2	13.2	45.1	63	30	35	37	37	37	37	37	37

A fresh opportunity of comparing my Barometers with the Standard of the Royal Society at Somerset House was kindly furnished by Captain HENNING of the Windsor, who brought with him a new and excellent instrument by NEWBURN, previously compared at home. It stood $\frac{1}{10}$ lower, that the Roy. Soc. Bar. and on 24 observations $\frac{1}{10}$ higher than my new standard, which would thus seem to be $\frac{1}{10}$ too low—a result I cannot put confidence in.—P.

